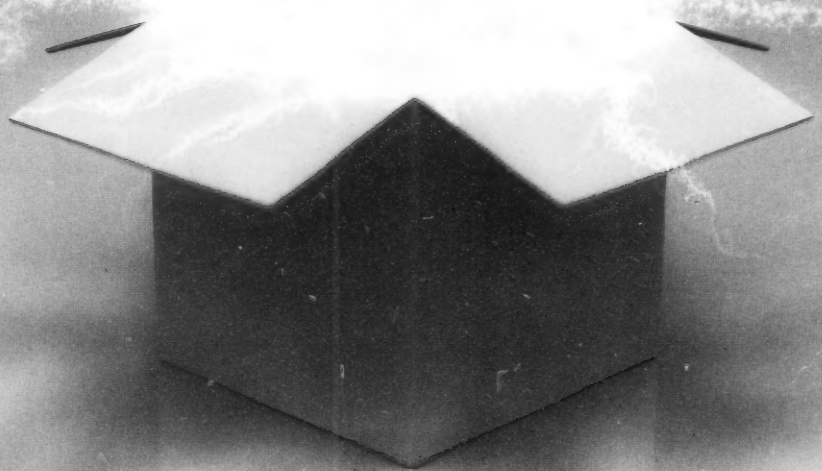
The Grill: Alfred Spector, Google's research chief, predicts the future of search and explains what makes his company tick. PAGE 15

COMPUTERWORLD®

SaaS Surprises

Think you know SaaS? Here are seven things that might surprise you about the fast-evolving software-delivery model. PAGE 18



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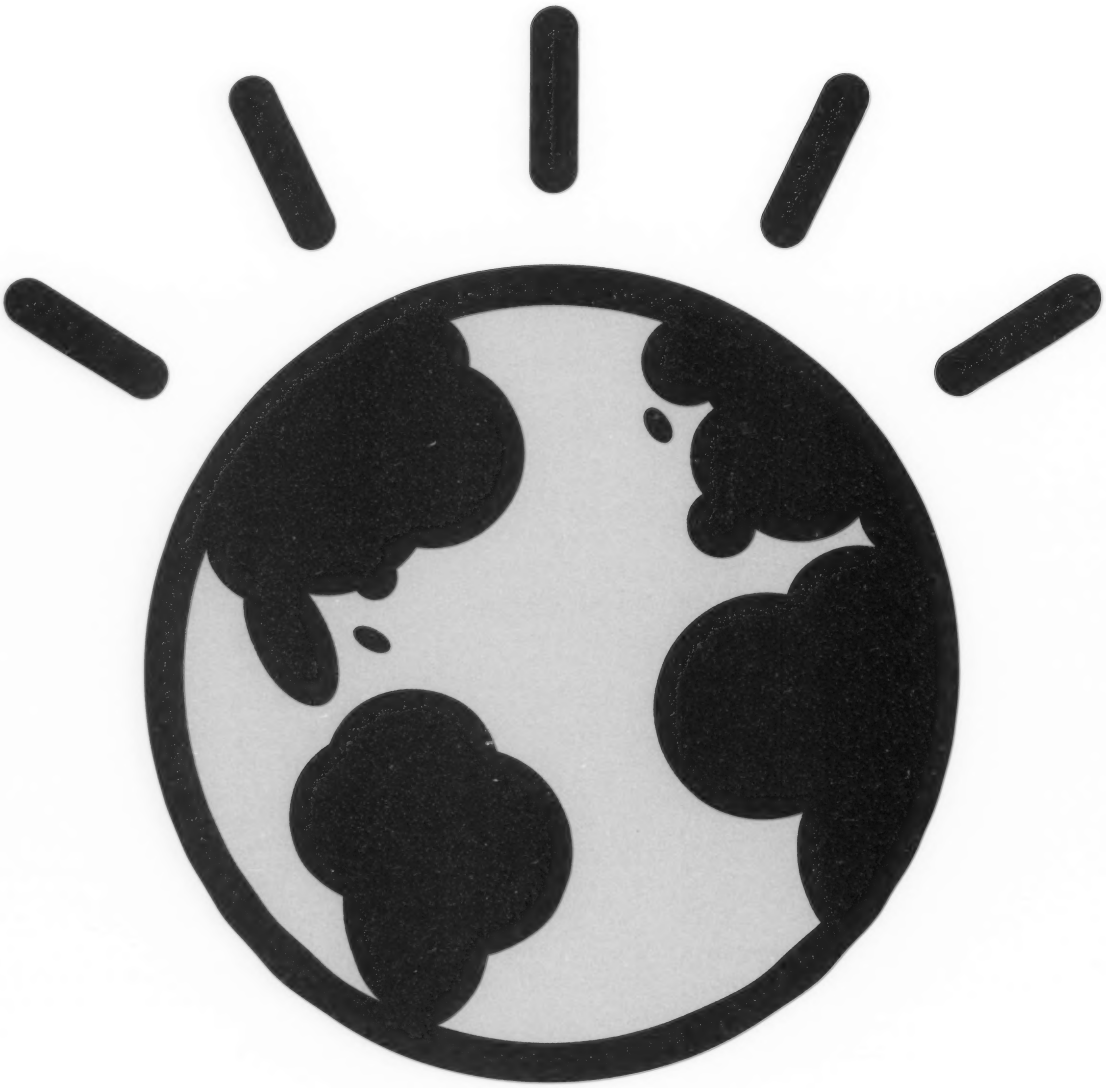
IBM THINK



Conversations for a Smarter Planet

A mandate for change is a mandate for smart.

The world is ready for change – that much is clear.

For leaders of all kinds, this moment presents a rare opportunity. Our planet is not just getting smaller and flatter. It is also becoming smarter.

That is, intelligence is being infused into the way the world literally works – into the systems, processes and infrastructure that enable physical goods to be developed, manufactured, bought and sold. That allow services to be delivered. That facilitate the movement of everything from money and oil to water and electrons. And that help billions of people work and live. This means we actually have the potential to change the way the world works.

That's good news, because the systems by which the world works today are increasingly unsustainable. They may be networked, but it turns out that being connected isn't enough.

It isn't enough to prevent us from wasting too much energy. From spending too much time in traffic. From producing food too expensively and wasting too much of what we produce. From missing too many sales opportunities and disappointing too many customers because of inefficient supply chains. From making too many medical errors and spending too much to provide healthcare for too few. And most obviously of late, from failing to manage financial risk.

Now, with computational power being built into things we wouldn't recognize as computers, any person, object, process or service and any organization, large or small, can become digitally aware, connected and smart. Consider the changes already under way.

Smart traffic systems are helping to reduce gridlock by 20%, cutting pollution and increasing ridership on public transit.

Smart food systems based on RFID technology embedded into supply chains are monitoring the flow of meat, poultry and other items – from the farm to the supermarket shelf.

Smart healthcare systems are helping to lower the cost of therapy by as much as 90%.

Police departments are correlating street-level information from myriad observations and devices to identify crime patterns – helping prevent crime rather than simply punishing it.

The list is long and the transformation is just beginning. Its benefits will be reaped not only by large enterprises, but also by mid-sized and small companies – the engines of economic growth everywhere – and by individuals and communities around the world.

Imagine how a smarter planet will transform the ways we pursue everything from economic growth to societal progress to environmental sustainability to cures for disease, as well as the ways we interact with each other and with the world.

The opportunity is before us, and the moment will not last forever. The question is, will we seize it? As we look to stimulate our economy and rebuild our infrastructure, will we simply repair what's broken? Or will we prepare for a smarter future?

Let's build a smarter planet. Join us and see what others are thinking at **ibm.com**/change

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BREAKING NEWS AT COMPUTERWORLD.COM

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COMPUTERWORLD ■ MARCH 23, 2009

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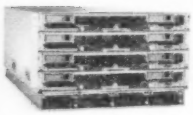

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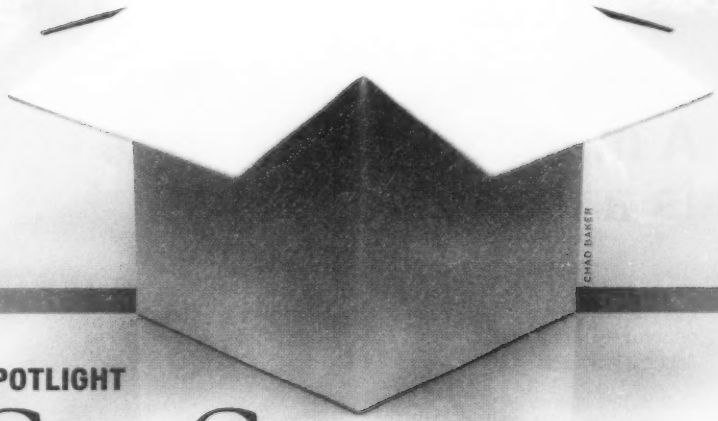


CHAD BAKER

SPOTLIGHT

SaaS

18 SaaS Surprises

In the early days, software as a service was confined to strictly cookie-cutter applications. But now SaaS subscribers can configure the software to suit the specific needs of end users.

23 Wrapped in Complexity

You might have been expecting simplicity with SaaS, but the need to exchange data between various hosted applications can create a tangled web. But IT doesn't need to go it alone.

25 Newfound Freedom

IT execs who once shied away from SaaS because they were concerned about losing the ability to customize applications, manage upgrades and execute changes are learning that control isn't all it's cracked up to be.

28 Packaged for Delivery

With platform-as-a-service, users can tap into a growing range of Web-based integrated development environments to build exactly what they want fast. And in some cases, they're selling what they build to other companies.

30 Five Myths About SaaS

Opinion: Jeffrey M. Kaplan, managing director of ThinkStrategies and founder of the SaaS Showplace, debunks five common myths about software as a service.

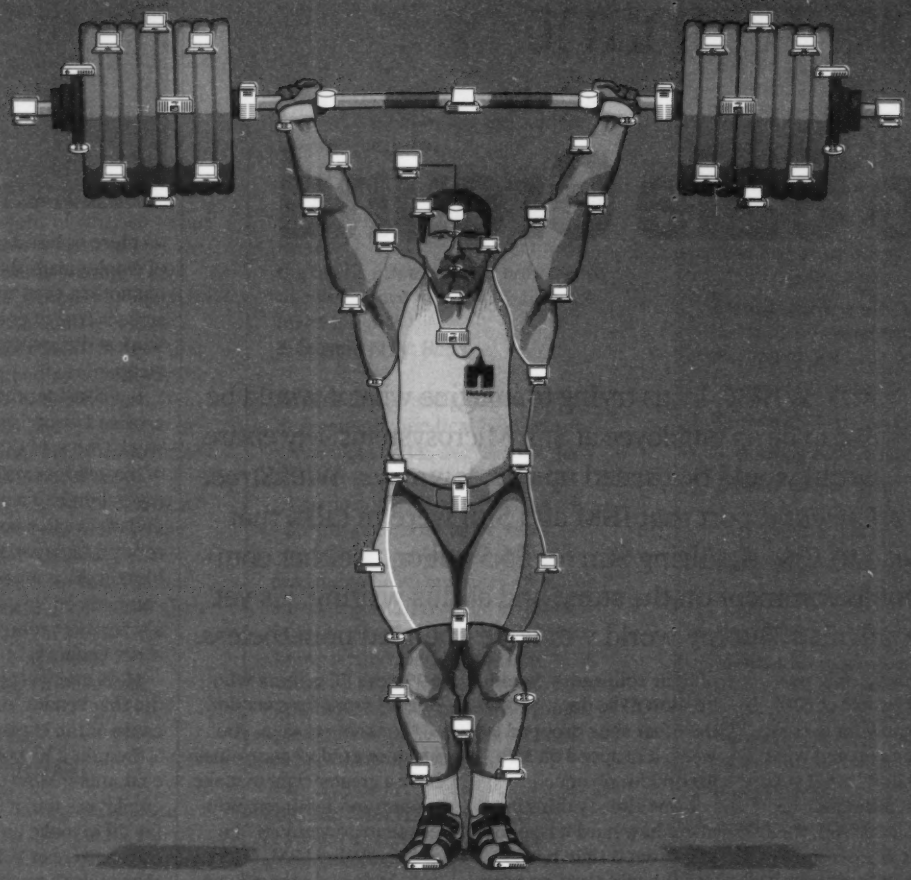
ONLINE

Find this coverage at **computerworld.com/more**

■ **BLOGS:** Read Mark Everett Hall's thoughts on SaaS and cloud computing.

■ **POLL:** Are you using SaaS now or planning to try it soon? Take a poll and tell us about your experience.

■ **NETWORK:** *Computerworld*'s SaaScon 2009 conference takes place March 31-April 1 in Santa Clara, Calif. Learn more at **www.saascon.com.**



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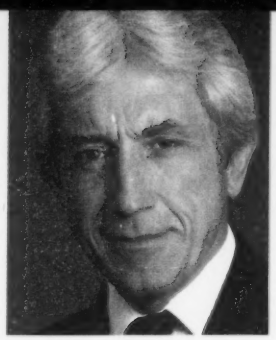
■ EDITOR'S NOTE

Don Tennant

No Safe Ground



LAST WEEK, I was trying to imagine what it would be like to be an employee at Sun Microsystems. My entire world would be turned upside down by a *Wall Street Journal* report that IBM and Sun were in talks that could lead to IBM acquiring Sun for $6.5 billion. Neither company would comment on the story, and at this writing, it's yet to be confirmed. But my world would be upended nonetheless.

Presumably, only relatively few people at IBM and Sun know for certain what's going on and what the likelihood is that such a deal will ultimately be consummated. Still, we all know that when a story like this gains traction, it's typically more than just the "rumor" that the companies involved routinely label such matters — even when the rumor has been intentionally leaked. This merger is eminently sensible for both companies, so barring a stunningly unexpected turn of events, it's going to happen.

We also know that in planning for just about any acquisition, especially one so large, mass layoffs are on the table. Many of the rank and file at IBM are no doubt still coming to grips with the thousands of job cuts that their company quietly made in January, just as Sun's employees are assuredly still grappling with the news from November that 5,000 to 6,000 of their colleagues would be shown the door. When the other shoe dropped last week, it dropped on safe ground for no one.

I was already thinking about how hard it is to find safe ground right now. I had thought I was on pretty safe ground last week when I wrote that renegotiating or even canceling vendor contracts was a better way to cut costs than laying off IT workers. After all, I was doing my reader advocacy thing — watching out for the interests of IT users, encouraging them to force their vendors to shoulder more of the economic burden. Who on earth was going to fault me for that?

Well, for starters, there was the reader in Chicago who identified himself as a 29-year IT veteran who doesn't work for a vendor.

■ When the other shoe dropped last week, it dropped on safe ground for no one.

"For some reason, you feel [nonvendor] companies have a greater right to make money and retain employees than do vendors," he wrote. "Why? IBM, Microsoft, Dell, and others have all announced layoffs. Are those better layoffs than layoffs at [nonvendor] companies? If so, again, why?"

My response to that pivotal question is a deeply rooted "no" — layoffs at vendor companies are not better than layoffs at nonvendor companies.

To me, a layoff is a layoff, and I've made that clear whenever I've written about that topic over the years. In fact, I've stepped from unsafe ground to a minefield whenever I've expressed my view that layoffs of citizens of one country are no better or worse than layoffs of citizens of another country, even when one of those countries is my own. If people of one country are no more or less deserving of employment than people of another, then surely the same is true of people who work at different types of companies.

But consider the IT executive I wrote about last week who said that one of his vendors will be losing out on half a million dollars in sales because it refused to negotiate with him on price when his company could choose alternative products from other vendors.

How many other deals did that vendor lose because of the chokehold it thought it had on its customers? How many employees will it have to lay off to make up for its intransigence? Where was the vendor's sensibility when it was needed most?

Back to IBM and Sun: Let's hope sensibility prevails at their negotiating table, and that layoffs aren't the expedient first step I wrote about last week. If I were a Sun employee whose talents yielded the technology that IBM finds so attractive but that my own company has failed to competently monetize, I'd think that would only be fair. And eminently sensible. ■

Don Tennant *is* Computerworld's *senior editor-at-large. You can contact him at don_tennant@computerworld.com, visit his blog at* http://blogs.computerworld.com/tennant *and follow him on Twitter at* http://twitter.com/dontennant.

RESPONSE TO:

Questioning Why

March 9, 2009

Since the economy consists of billions of decisions of whether to buy something now or later or save the money, I certainly wish you luck in figuring out how to manage it so there will be no more recessions.

Economists seem to believe that the federal spending to remedy the recession is a) way too much, b) in the right ballpark or c) way too little. Does anyone really believe they know what they are doing?

If any group out there can figure out how to skip recessions in the business cycle, we should elect them to congress for life. Without perfect rationality, honor and altruism throughout the population, I doubt it can be achieved.

■ **Submitted by:** *P.D. Norman*

RESPONSES TO:

Career Watch

March 9, 2009

This downturn hit YEARS ago in some areas (Midwest for example). Most of the best IT people I have worked with have left the field for greener pastures.

If this continues, the fairy tale about a "tech labor shortage" may come back to haunt the people who thought it up. I guess if you repeat the big lie often enough, not only do people believe it, you may actually make it true!

■ **Submitted by:** *Bobr*

I'm leaving IT and going to get a degree in the medical field. My engineering and CS degrees got me a six-year career of long hours, low pay, and constant worry about offshoring and cheap labor visas.

It's kinda sad for me, as I had wanted to be an engineer all my life. My grandfather (an engineer) would roll over in his grave if he knew what America has done to its children in the name of cheap labor. I'm just glad I got my student loans paid off before I was laid off.

■ **Submitted by:** *Thomas*

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Hands On With DirectAccess

REVIEW: DirectAccess, new to Windows Server 2008 R2, promises always-on connectivity. But check the fine print.

6 Web-based Image Editors

REVIEW: A look at the latest alternatives to desktop image-editing applications.

15 Free Downloads to Pep Up Your Old PC

Can't afford a new machine? These free tools will help breathe new life into your old Windows PC.

How to Stay Up In a Down Economy

As the layoffs mount, we offer six ways to help you safeguard your emotional health and keep your outlook bright in dark times.

Twendz Rates the Latest Twitter Trends

REVIEW: Want to know whether people are happy about the latest Next Big Thing? Check it out in Twendz.

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News Digest

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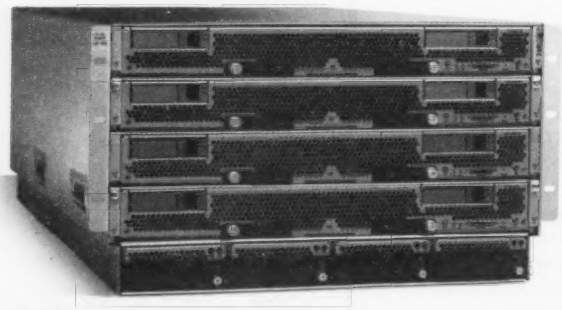
THE WEEKS AHEAD

MARCH 25: Cisco is due to release a bundle of patches for its IOS networking software in its latest twice-yearly update.

MARCH 31: *Computerworld*'s SaaScon 2009 conference, on software as a service, starts in Santa Clara, Calif.

APRIL 1: The International CTIA Wireless 2009 conference and exhibition opens in Las Vegas.

APRIL 2: Research In Motion plans to report its Q4 results.



HARDWARE

New Blade Server Key to Cisco Data Center Plan

CISCO SYSTEMS INC. has unveiled its first blade server, which will serve as the centerpiece of a system the company promises will make adding virtualization to corporate data centers easier — and less expensive.

The the Unified Computing System, announced last week, includes the UCS B-Series blade server, a Cisco switch, VMware virtualization technology, and other Cisco and third-party tools combined in a single rackable system designed to manage virtualized data centers, the company said. Analysts expect the system and services package to be priced from about $100,000.

Cisco said it will disclose more information about the UCS next month.

The blade server, which will compete with offerings from longtime Cisco partners Hewlett-Packard Co. and IBM, is based on Intel Corp.'s Nehalem processor and includes extended memory technology to support applications with large data sets. The server will be used to manage and automate the movement of virtual machines and applications across data center servers.

In a press briefing, CEO John Chambers said the UCS represents a "market transition" for the company. "We believe that the network is at the heart of tying this all together. We look at this as [Cisco] bringing virtualization to life."

Cisco CEO John Chambers announced the UCS during a teleconference with reporters in 11 cities around the world.

Cisco said the full UCS system, slated to ship in the second quarter, is currently being tested by 10 beta customers, including IT services firm Savvis Inc.

"The UCS works well," said Savvis Chief Technology Officer Bryan Doerr. "We're just to the point of stressing major features and functions." Savvis provides network and data center services to 4,000 customers from 29 data centers around the globe. The Town & Country, Mo.-based company isn't being compensated for testing the Cisco technology, Doerr said.

Savvis is evaluating the UCS to determine whether it would be the best option in the company's effort to create more scalable virtualization than it uses now. Today, Doerr said, Savvis focuses "more on physical virtualization and cloud-based services that leverage conventional services such as VMware provides."

Later this year, Savvis will pit Cisco's UCS against other virtualization server systems so it can determine which system best meets its needs, Doerr added.

— Matt Hamblen

LEGAL ISSUES

Intel Threatens To Pull Patent Plug on AMD

Intel Corp. last week threatened to terminate rights granted to rival Advanced Micro Devices Inc. under a patent cross-licensing deal, claiming that AMD's spin-off of its chip manufacturing operations this month was a breach of the agreement.

Intel contended that the manufacturing joint venture with an investment firm owned by the Abu Dhabi government doesn't qualify as a subsidiary of AMD.

Harry Wolin, AMD's general counsel, disputed that claim and accused Intel of "trying to create churn in the marketplace." He also said Intel's threat amounts to a breach of the licensing deal.

Mark Walters, a patent lawyer at Darby & Darby PC, said AMD may be exploiting a loophole by calling the spin-off a subsidiary. But neither he nor analysts expect the dispute to hamper production of AMD chips.

– ERIC LAI

> **"I'd worry more about a meteor slamming into the Earth."**
>
> NATHAN BROOKWOOD, INSIGHT64 ANALYST, ON THE POSSIBILITY OF A DISRUPTION IN AMD'S SHIPMENTS

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SECURITY

Visa Slaps Payment Firms On Breaches, Defends PCI

TWO PAYMENT processors that recently disclosed data breaches have been dropped from Visa Inc.'s list of companies that comply with the PCI data security rules. But analysts said the move may be more about Visa protecting itself than about improving the security of payment card data.

Visa said on March 13 that it was dropping Heartland Payment Systems Inc. and RBS WorldPay Inc. from its PCI-compliant list. The company added that it would "consider" restoring Heartland and RBS WorldPay if they are recertified as compliant by third-party assessors.

Gartner Inc. analyst Avivah Litan said that, strictly speaking, Visa's actions mean merchants can't use either payment processor if they themselves want to remain compliant with the PCI rules, which are known as the Payment Card Industry Data Security Standard (PCI DSS).

It's highly unlikely, though, that Visa intends for the sanctions to be interpreted in such a restrictive way, Litan said. Instead, she contended, they appear to be designed primarily to give Visa legal protection and prevent Heartland and RBS WorldPay from using PCI DSS as a shield against breach-related lawsuits.

> **"It's all legal maneuvering by Visa. This is PCI enforcement as usual: They're making the rules up as they go.**
> AVIVAH LITAN, ANALYST, GARTNER INC.

"This is all about Visa protecting Visa," agreed David Taylor, founder of PCI Knowledge Base, a Web site that offers advice on PCI-related issues.

Taylor acknowledged that the two breaches have created a "difficult situation" for Visa, which has taken the lead among credit card companies in trying to enforce the PCI rules. But Visa officials seem anxious to avoid getting into debates about the standard's effectiveness, he said.

In a speech at the Global Security Summit, which Visa held in Washington last week, Ellen Richey, Visa's chief enterprise risk officer, insisted that PCI is "an effective security tool when implemented properly."

The breach at Heartland wouldn't have happened, Richey said, if the payment processor had been vigilant about maintaining its PCI compliance. "No compromised entity has yet been found to be in compliance with PCI DSS at the time of a breach," she said.

However, Heartland has said that its PCI compliance was validated by an auditor last April, only a month before the breach is thought to have begun.

Similarly, RBS WorldPay, which was certified as compliant last June, said last week that it has made "no material system changes that would have negatively altered the certification."

— Jaikumar Vijayan

Short Takes

- SAP AG has laid off an undisclosed number of employees as part of a previously announced plan to trim 3,000 jobs, a company spokesman confirmed. The software vendor had initially hoped to lower its head count to 48,500 through attrition.
- Oracle Corp. reported overall third-quarter sales of $5.45 billion, a 2% increase compared with the same period last year. However, the company also noted that new software license revenue, a key indicator of business strength, fell 6% to $1.5 billion.

FROM THE EDITORS: At the 55th Annual Jesse H. Neal National Business Journalism Awards ceremony in New York on Thursday, *Computerworld* won two awards for Web sites with more than 400,000 unique visitors per month: Best Online Article or Series, for our 100 Best Places to Work in IT 2008 special report, and Best Blog, for Seth Weintraub's Apple Ink.

IT IN GOVERNMENT

Kundra Back as Federal CIO After Short Leave

Vivek Kundra

PRESIDENT OBAMA let Vivek Kundra return to his new job as federal CIO last Tuesday, five days after Kundra took a leave of absence following the bribery-related arrest of a former subordinate in the District of Columbia's IT department.

The White House reinstated Kundra after receiving assurances from federal law enforcement officials that he wasn't suspected of any wrongdoing. "Mr. Kundra has been informed that he is neither a subject nor a target of the investigation," White House spokesman Nick Shapiro said via e-mail.

Kundra was the district's chief technology officer before being tapped by Obama to be the federal government's first official CIO. He had been on that job for only a week when the acting chief security officer in the district's IT department and the CEO of an IT contractor were arrested on March 12.

The arrested men allegedly collaborated to overbill the district's government on software purchases by submitting purchase orders for more licenses than were actually delivered.

Yusuf Acar, the IT staffer charged in the case, is being held without bail. He asked to be released at a court hearing last week, but a federal judge ordered him to remain in custody, siding with prosecutors who contended that Acar might try to flee the country. The judge also said that the evidence underpinning the bribery charges is "overwhelming."

– PATRICK THIBODEAU

MOBILE COMPUTING

iPhone 3.0 Lures Business Users, but They Want More

THOUGH APPLE INC.'S new iPhone 3.0 software doesn't meet all the needs of businesses, some users said it should make the mobile device somewhat more attractive to IT managers when it ships this summer.

For example, Jorge Mata, CIO for the Los Angeles Community College District, said the ability to tether Windows laptops to the Apple device could immediately save his operation money. If carrier AT&T Inc. keeps tethering costs low, the district's 200 iPhones could function as modems, obviating the need for the $60-per-month air cards now in user laptops.

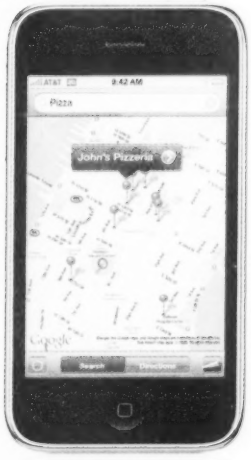
And Stuart Maxwell, an IT manager at Herrera Environmental Consultants Inc., said he hopes engineers at the company can take advantage of iPhone 3.0's ability to automatically tag photos with a location.

Some analysts noted that new push, cut-and-paste, and calendar sync capabilities are also attractive to IT managers. However, others said the updated software still lacks key features.

Ken Dulaney, an analyst at Gartner Inc., pointed out that the updated software lacks the ability to run multiple applications at once, a key requirement for corporate users. "It desperately needed background processing," he said. "You can't do security effectively without it."

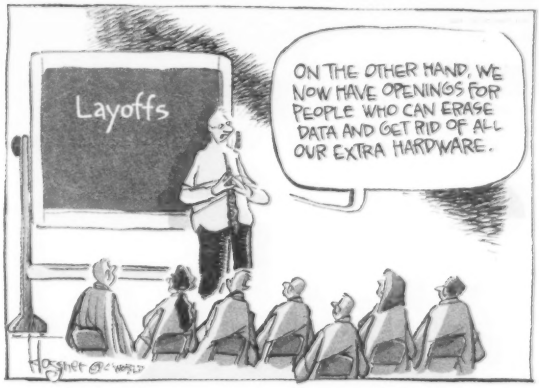
Dulaney noted that security programs must run independently of the applications they're auditing in order to be effective. "[Apple has] been enormously pressured by enterprise buyers to put this in," he said, "and I thought they'd respond."

— Nancy Gohring, IDG News Service, and Matt Hamblen



BETWEEN THE LINES

By John Klossner



BENCHMARKS LAST WEEK

Microsoft Corp. released Internet Explorer 8, making the new browser available for downloading on its Web site. It didn't say when automatic updates will begin.

Sun Microsystems Inc. announced cloud-based computing and storage services, due to go live in the summer, for use in developing and testing applications.

12 YEARS AGO: Novell Inc. named Eric Schmidt, then chief technology officer at Sun, its chairman and CEO. Schmidt, who called that job "the opportunity of a lifetime," left in 2001 and became Google Inc.'s CEO.

Global Dispatches

HCL Gets $350M Outsourcing Pact

NOIDA, India – HCL Technologies Ltd. last week was awarded a $350 million (U.S.) outsourcing contract by The Reader's Digest Association Inc. in Pleasantville, N.Y.

The seven-year infrastructure management and application development contract calls for the outsourcer, based here, to hire an undisclosed number of Reader's Digest employees.

Reader's Digest operations in 45 countries in North America, Latin America, Europe and Asia will be supported from HCL facilities in Poland, the U.S. and India. The outsourcer will also provide on-site support to the magazine publisher.

John Ribeiro,
IDG News Service

Nokia to Lay Off 1,700 People

ESPOO, Finland – Nokia Corp. last week said it will lay off 1,700 workers as it grapples with declining mobile phone sales.

The jobs will be cut mostly from the company's devices unit, which oversees development and management of Nokia's mobile devices, and from its markets unit, which manages supply chains, sales channels and marketing activities.

The layoffs are part of an effort to cut costs by $700 million over the next year.

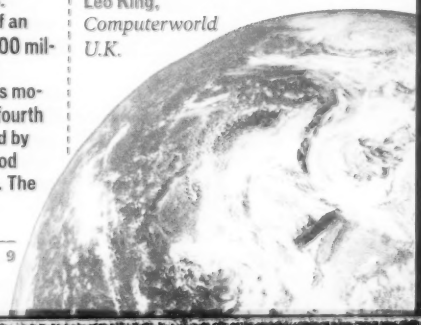
Nokia reported that its mobile phone sales for the fourth quarter of 2008 declined by 15% from the same period last year, to 113.1 million. The company sold 117.8 million devices in the third quarter.

Mikael Ricknäs,
IDG News Service

BRIEFLY NOTED

London's Metropolitan Police Service last week announced plans to roll out 80,000 smart cards and about 140,000 readers to better control access to its buildings and IT systems. The readers will be compatible with Windows XP and Vista, and the smart cards will be based on the JavaCard 2.2 standard, the service said. The agency said it is currently assessing potential suppliers.

Leo King,
Computerworld U.K.



Outcome Is Uncertain For IBM, Sun – And Users

The two server rivals are reportedly in acquisition talks. A deal may be good for them, but it raises questions for Sun shops. By Patrick Thibodeau

AN ACQUISITION of Sun Microsystems Inc. by IBM might have its good points, especially for Sun's long-suffering shareholders. But IT users and analysts have concerns about the prospective deal that can be summed up in two words: *uncertainty* and *fear.*

While Sun is a diminished company these days, it remains influential, thanks largely to its open-source products and the massive development communities that have built up around them — Java and MySQL in particular.

Now, with IBM and Sun reportedly engaged in acquisition talks, there are questions about what IBM might do with those technologies.

For instance, the potential deal got mixed reviews from Java users last week. On the Javalobby developer site, forum posts voiced worries that IBM would favor its own software products at the expense of Sun's.

There's also the issue of community relations. In Philadelphia alone, the local Java user group has more than 1,200 members. David Fecak, president of the decade-old group, said he and other members of the Java community like the democratic process that Sun has put in place to guide the technology's direction.

If a takeover does occur, Fecak wondered, would IBM continue to let the Java community operate as it does now — or would it move decision-making "underground" and take "the community process away from the community"?

Gordon Haff, an analyst at Illuminata Inc., sees an inherent conflict between Sun's open-source ethos and what he thinks is IBM's continuing proprietary direction. Although IBM has been a big supporter of Linux, its embrace of the open-source operating system "is in the context of what serves IBM," Haff said.

Such leanings are even more pronounced in the database market, according to Haff. Buying Sun would give IBM MySQL, the open-source database that Sun itself acquired last year. But, Haff said, "IBM doesn't push open-source databases. They push DB2."

Other observers, though, think that IBM is likely to be more interested in software technologies like Java and MySQL — the latter of which is used by Google, Yahoo and a host of Web 2.0 companies — than it is in Sun's hardware products.

Sun is still a major server vendor with a considerable installed base that no doubt would be attractive to a rival like IBM. Market research firm IDC says Sun sold nearly $1.3 billion worth of servers in last year's fourth quarter, leaving it No. 4 in worldwide market share.

However, Sun's line of servers based on its own Sparc processors and Solaris operating system could face an uncertain path under IBM, which sells systems built around its Power processors and AIX software that compete directly with the Sun machines. Whether IBM would want to maintain Sun's x86-based systems in addition to its own is another open question.

IBM could shut down or try to sell off Sun's Sparc business, but it would risk losing customers such as Daniel Grim, executive director of networks and systems at the University of Delaware in Newark.

Grim, a longtime Sun user, has been adding more Sparc systems to run the university's PeopleSoft applications. He foresees a long-term shift away from that technology, but he said Sun's x86-based hardware is an appealing platform for Solaris. "We like the designs, and we like the price," Grim said, adding that Sun's offerings tend to be significantly less expensive than rival x86-based systems from other vendors.

In addition to the technology issues that would result from an acquisition, Sun's corporate culture could pose challenges for IBM.

"Sun is a company that has been based on and driven by the work of mavericks," said Charles King, an analyst at Pund-IT Inc. "It's critical for IBM to somehow maintain the culture of Sun in a way that preserves that history of innovation."

The problem for Sun has been translating that culture into a viable business model at a time when selling Unix servers isn't enough. It hasn't been able to wring much money out of technologies like Java and MySQL; IBM might be better suited to do so, but at what cost to users? ■

The IDG News Service contributed to this report.

SETTING SUN?

- Sun lost $209 million in its fiscal second quarter, which ended in December, and $1.7 million in the previous three months.
- Revenue declined 11% year to year in Q2, with product sales falling by 14%.
- The company is in the process of laying off up to 18% of its workforce, or as many as 6,000 employees.
- Sun lost ground on server market share to IBM, HP and Dell during 2008, according to IDC.

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* IDC, October 2008

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BAD TIMES Force IT to Deal With ORPHANED HARDWARE, SOFTWARE

Mounting corporate layoffs are causing unused PCs and software licenses to pile up.

By Lucas Mearian

PAT BEEMER, the IT director at Seattle Lighting Fixture Co., has a lot of orphaned computer hardware and unused software licenses on his hands — the result of what he called "serious" layoffs at the company in recent months.

"Some of these PCs had sensitive data on them," Beemer said. "We're scratching our heads [over] what to do with them." He added that the company is working with software vendors to renegotiate licenses for products that are being taken out of service either temporarily or permanently.

The Seattle-based retailer has plenty of company dealing with orphaned hardware and expensive unused software licenses.

The troubled economy has forced many companies to lay off substantial numbers of workers, leaving countless desktop computers, laptops, handheld devices and even large servers — often holding sensitive corporate data — gathering dust in vacant cubicles or in stockrooms. And in many of those cases, companies are still paying monthly or annual license fees for software installed on the unused machines, analysts said.

There are processes that can be implemented to effectively deal with those issues, analysts say, but such projects become much more difficult with the loss of experienced workers.

Employment numbers released by the U.S. Bureau of Labor Statistics show that companies will probably be dealing with the problem of orphaned IT products for quite some time. The bureau reported that nonfarm employment fell by 651,000 in February, 655,000 in January and 681,000 in December. And from December 2007, when the recession began, through February 2009, 4.4 million people lost their jobs, the BLS said.

"Let's say half of those [laid off] are knowledge workers," said Forrester Research Inc. analyst Peter O'Neill. "A knowledge worker usually has a copy of Microsoft Office, so you can make a direct correlation" between the number of layoffs at a company and the number of software licenses outstanding.

The soon-to-be-released results of a software budget survey Forrester conducted

Continued on page 14

PHOTO BY FREUDENTHAL VERHAGEN

SIDE-BY-SIDE SUPPORT FOR WINDOWS SERVER 2008 AND SUSE LINUX ENTERPRISE.

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Continued from page 12
between December 2008 and February 2009 show that more than one in five businesses that audited their software over the past year are paying for at least some unused software, or shelfware.

At the same time, the Forrester survey of 776 U.S., European and Asian companies found that only 35% of the respondents were using a third-party firm to audit software licenses, so the percentage of companies with unused software is likely even higher.

O'Neill said that the survey also found that, on average, 15% of corporate software maintenance payments are for licensed shelfware.

"At the end of the day, I'd say almost every company ... [has] shelfware," said O'Neill, who is based in Germany. "I've seen it in Europe even more dramatically. Many companies have no comprehensive, well-documented end-of-life program for hardware and software."

He called the lack of such programs "a business oversight now coming to light as the recession deepens."

Seattle Lighting, which has retail stores in nine locations in the Pacific Northwest, has just begun to look at how it will implement an end-of-life policy for hardware, according to Beemer.

Most of the company's sensitive data resides on centralized servers, and for hardware without a home, "most likely, we'll run an eraser tool on hard drives," he said.

SOFTWARE OPTIONS

O'Neill suggested that companies may have an easier time solving the software licensing problem, because vendors that would never have considered renegotiating a software contract two years ago have softened and are now likely to rework deals to keep customers.

"This year especially, [software vendors] are highly dependent on maintenance ... and that's dependent on the relationship with customers," he said. "Even Microsoft these days probably doesn't feel that safe."

Beemer said that hundreds of Seattle Lighting's software licenses have been orphaned because of the layoffs there.

"We're aggressively asking our vendors for renegotiations," he said. "In some cases they do, but others won't. That goes across the board for the enterprise in general, including lease negotiations."

Simson Garfinkel, an associate computer science professor at the Naval Postgraduate School in Monterey, Calif., suggested that a long-term solution to the licensing issue would be to start migrating to open-source software. Open-source software would "render this issue moot," he said.

One option for orphaned hardware is to ship it to computer recycling companies, though experts caution that that path could lead to some unforeseen security risks.

For example, Angie Keating, vice president of compliance and security at Reclamere Inc., a Tyrone, Pa.-based IT asset management company, noted that customers are increasingly sending Reclamere hard disk drives that hold sensitive corporate data. In fact, she said that about eight of 10 computers sent to Reclamere still contain hard drives that were supposed to have been removed.

The poor economy has proved to be a boon to Reclamere's business, Keating noted. "Trucks are booked. Schedules are tight," she said.

A SENSITIVE ISSUE

The increase in the number of drives with sensitive data that Reclamere is receiving could be traced to workforce cuts at customer companies. Often, such cutbacks include the people who had been responsible for making sure that systems were ready for recycling.

> **"We're aggressively asking our vendors for renegotiations. In some cases they do, but others won't. That goes across the board for the enterprise in general, including lease negotiations.**
>
> **PAT BEEMER**, IT DIRECTOR, SEATTLE LIGHTING FIXTURE CO.

Keating added that the economic climate is probably making sensitive data from struggling and failed companies readily available in a variety of ways. "In some cases, those companies have gone bankrupt; the data is literally just sitting out there, probably sitting on eBay," Keating said. "It is very frightening to me as a consumer, a mom, a health care patient. Everybody's data is out there."

Kessler International, a New York-based computer forensics company, reported last month that 40% of the hard disk drives it recently bought in bulk orders on eBay Inc.'s online auction site contained sensitive information.

Keating recommended that companies have three things in place to ensure that data is properly destroyed: a thoroughly documented process, a strong quality-control program, and solid follow-up documentation about what was done to orphaned equipment and who did it.

"If you have, say, 500 machines — and that's a small number — coming out of service, and you've got them stacked up, how do you know which ones have been processed and which haven't if you don't have a quality control program?" she said.

Garfinkel agreed that an end-of-life program must include strong documentation policies. He asserted that dealing with orphaned hardware doesn't require expensive or complex technologies.

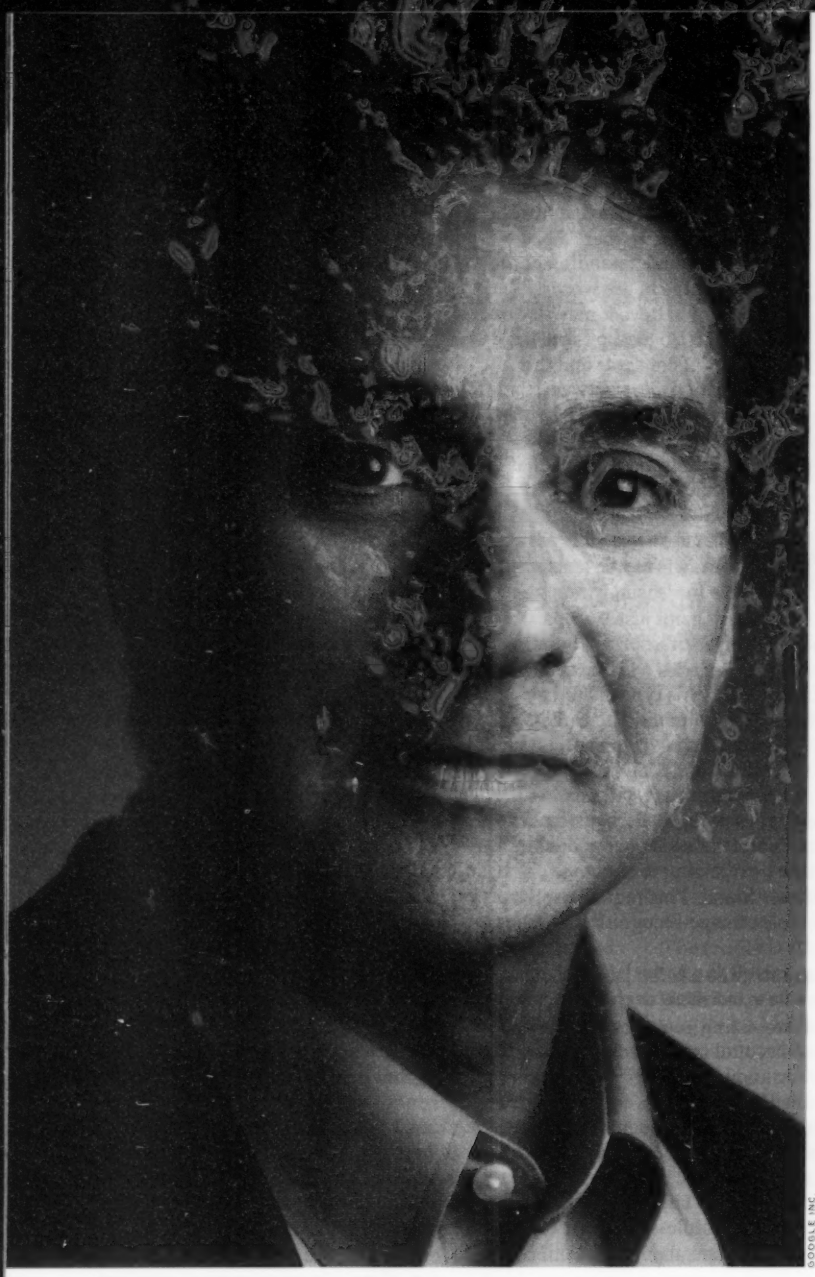
"A lot of people say that it's technically difficult or even impossible to overwrite the contents of a hard drive," Garfinkel said. "This is not true."

He said that open-source software, such as Darik's Boot and Nuke, or DBAN, "does a great job." Once the data is overwritten using such tools, Garfinkel said, companies should "track which drives you have erased and which you have not."

He added that an easier option is "to just punch a hole through each hard drive."

Laura DeBois, an analyst at IDC, said other options include encrypting a drive and throwing away the encryption key, or electronically "shredding" data by overwriting it using hard-drive-wiping software that's been approved by the U.S. Department of Defense or the National Institute of Standards and Technology.

Another option is to simply keep the hardware in a secure warehouse until better economic times roll around, DeBois added. ■



GOOGLE INC.

■ THE GRILL

Alfred Spector

Google's **VP of research** talks about **where search is headed,** what **difference** it will make and what makes **his company tick.**

Dossier

Name: Alfred Spector

Title: Vice president of research and special initiatives

Organization: Google Inc.

Location: Mountain View, Calif.

Favorite non-Google technology: His grand piano

Technology pet peeve: "Having to be an active administrator for eight computers at home."

In high school, he was: "Editor of the yearbook and planning to be a broadcast journalist."

Favorite nonwork pastime: "My kids."

Philosophy in a nutshell: "I try to balance across two dimensions – balancing the needs of my family/friends/society, productive enterprise, and self; and focusing on achievement yet remembering to mark the passing moments."

Role model: "My father."

Recent good read: *The Brothers Karamazov*

Favorite movie: *Manhattan*

What kinds of things are coming out of Google research? Google Search by Voice is an example. Wouldn't it be nice to tell a handheld device what you want to know? It's an interesting problem in that one needs to understand spoken voice, correlate that with the most likely search queries, and then show the search result — doing all this with an intuitive, speedy user interface. This work comes out of our basic research efforts in speech recognition. The Google Mobile App with voice search has been on the iPhone for a few months, and we just released Google Search by Voice on Android [Google's open-source software for mobile devices].

What longer-range projects are you working on? With all the data on the Web, shouldn't we be able to take that information and create a database of concepts — or entities — and the relationships between them? For example,

"With all the data on the Web, shouldn't we be able to take that information and create a database of concepts – or entities – and the relationships between them?

consider the "is a" relationship. A dog is a pet; a son is a boy, for example. But AI often thought these relationships had to be taught to a system by experts. But the question we have is, can we learn all these things from a huge amount of interaction with a very large corpus of information? If so, we could codify and structure significant aspects of knowledge. The system could automatically glean many kinds of information. It's a very long-range effort.

What would you do with that database of relationships? Let's imagine our search software is responding to a query on pets, but we find articles on dogs and cats, but without the word *pets*. This database of relationships would let Google know that the article is probably about pets because there are multiple instances of a subcategory of "pet." The database would enable much better search and better language translation because there'd be a better understanding of the meaning of the words.

We believe it may be possible to build up these huge sets of concepts and the relationships between them. You could gain two benefits: more-focused results and probably also results that wouldn't otherwise be found.

What are some other advances coming in search technology? We increasingly are interested in returning not just Web pages, but multiple forms of information: images, books, blog entries, videos, tables, fax, etc. With this type of "universal search," for example, a picture might be the best thing to return. But it could be a table, an audio file, etc.

We are also interested in allowing new types of input. Perhaps, rather than a text string, a query could be made by referring to an image one has already found. This requires solving complex image-recognition problems.

Can search do a better job of tailoring results to individual users? It's clearly an interesting goal for a system to take into account our interests, what we already know and, perhaps, even how we individually learn. We experiment and think about those questions a lot. But it can be tricky. For example, if I'm doing a medical query, should it be biased [toward] what I might be worried about as a middle-aged male, or might I be concerned about my mom?

Do you have plans to go after that huge body of information on the Internet that is not currently searched? There is stuff on the Web, the so-called Deep Web, that is only "materialized" when a particular query is given by filling fields in a form. Since crawlers only follow HTML links, they cannot get to that "hidden" content. We have developed technologies to enable the Google crawler to get content behind forms and therefore expose it to our users. In general, this kind of Deep Web tends to be tabular in nature. It covers a very broad set of topics. It's a challenge, but we've made progress.

What's Google's computer infrastructure like? Google uses what is now termed "cloud computing." We have numerous clusters, each containing large numbers of computers. The clusters run a distributed computing infrastructure that uses Linux on each computer. All the computers are then tied together with high-performance networking and distributed computing software. For example, we have built and deployed a global file system called the Google File System that provides scalable, fault-tolerant storage; a record-oriented data storage system for tabular data called BigTable; and a computational programming model called MapReduce that allows our batch jobs to use the inherent parallelism in our clusters.

[As for] the exact number of machines, locations and clusters we have, suffice it to say that we have so many individual elements in our fabric that an enormous amount of attention is paid to fault tolerance, because with so many elements operating, there are exceedingly frequent component failures.

Could other companies emulate that kind of architecture? First, there really are economies of scale in running systems that can support many services on a common fabric. Second, relating to the services model we espouse, there are great simplifications to releasing software as a Web-based service, because services don't have to be tested and deployed on a large number of different customer environments. Instead, software can be released to a small number of machines in a more controlled cloud and then accessed by browsers.

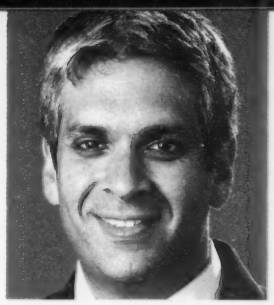
A third benefit is that since a software service is a logically centralized notion, the history of interactions of very many users can be aggregated and thus be the basis for various types of self-learning systems. Google uses this concept to learn to correct spelling mistakes, but businesses can use similar notions to better meet the needs of employees or customers by learning, for example, of common errors, unfulfilled product searches, etc.

—*Interview by* **Gary Anthes**

■ OPINION

Ira Winkler

Welcome to the Real World, Rod



WHEN ROD BECKSTRÖM decided earlier this month to step down as director of the National Cybersecurity Center, it was the best decision of his tenure. Unfortunately, it can't begin to make up for his worst decision regarding the NCSC over the past year: taking the job in the first place.

Upon his appointment last March, Beckström was hailed as a consensus-builder, Silicon Valley entrepreneur, philanthropist and all-around good person. People who like to suck up to the government for monetary or personal gain hailed the appointment as visionary and touted Beckström as the only person who could bring government together to secure itself. My response was, "But he doesn't know anything about security or working inside the government."

Sadly, I was very right.

It's not that I believe Beckström is a bad person in any way. But I didn't buy the Pollyanna attitude that one person can overcome decades of bureaucracy. It also takes a bit of arrogance for someone without any cybersecurity experience to think he can take charge of cybersecurity for the most complicated organization in the world — the U.S. government.

Now reality has set in. In announcing his departure, Beckström complained that the National Security Agency is too involved with the NCSC. No mention of the bigger issue that his whole organization received only five weeks of funding over the past year. Frankly, not being funded should be a clue to how much the larger organization values your work.

I have criticized the NSA's domestic spying, which I believe has set the agency's reputation back decades. The NSA's leadership should be ashamed of this chapter in the agency's history. Now is when we most need the NSA's expertise, but its domestic spying makes its involvement in a civilian program like the NCSC unpalatable.

■ My concern was that Beckström didn't know anything about security or working inside government.

But that's a battle that was lost before Beckström even walked in the door. The reality is that there is no other option to the NCSC, now or in the near future. Beckström's gross naiveté or willful ignorance is not helpful.

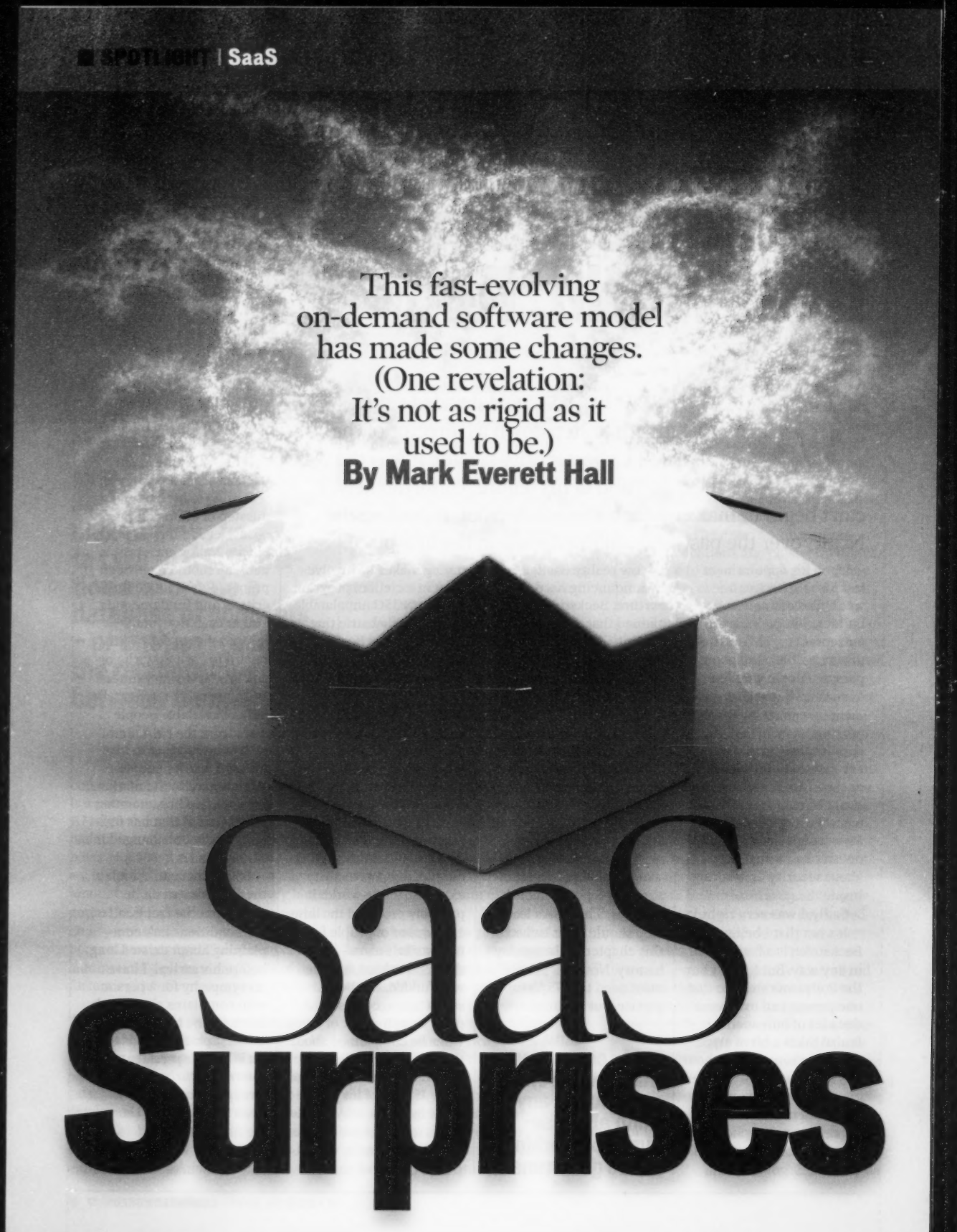
The NSA has been responsible for securing government computer systems for more than three decades. It has the largest pool of cybersecurity expertise in the world. It probably provided the largest number of people for Beckström's team — and the NSA, at least, is quite well funded. But Beckström managed to sound petty as well as out of touch when he complained about the plan to move his group to Fort Meade, home of the NSA. If most of his people come from the NSA and he needs to attract even more people to his team, why not accept this bit of convenience for his staff?

At recent congressional hearings on cybersecurity, experts criticized the DHS for being unable to attract and retain good talent. Assuming these experts are correct, how did Beckström think he could acquire the talent necessary to replace the NSA if it were removed from the NCSC?

When thinking about Beckström, though, I keep returning to his original misstep of taking on the NCSC leadership. As a Silicon Valley entrepreneur, he should have been prepared to evaluate three critical and fundamental issues: cash flow, staffing and the market. With regard to cash flow, the organization was not funded. With regard to staffing, the bulk of available people were from the NSA, and he had no funding to hire his own quality people. With regard to the market, it is an incredibly stagnant environment that has fundamentally not changed in three decades.

Beckström can criticize the government all he wants, but the fact is, all of the conditions he's complaining about existed long before his arrival. I have no sympathy for a person who complains about a job he shouldn't have taken in the first place. ■

Ira Winkler *is president of Internet Security Advisors Group and author of the book* Spies Among Us. *He can be contacted through his Web site,* www.irawinkler.com.



This fast-evolving on-demand software model has made some changes. (One revelation: It's not as rigid as it used to be.)

By Mark Everett Hall

SaaS Surprises

CHAD BAKER

Medco Health Solutions is shifting to on-demand services to help speed regulatory compliance efforts during acquisitions, says **Jayme Antonoplos.**

CHAD BAKER

IT'S A CASE where perception doesn't match reality. The phenomenal success of NetSuite Inc. and Salesforce.com Inc., two high-profile public companies with Silicon Valley roots that offer CRM suites, has given software-as-a-service technology the image of a one-trick pony — merely a tool for marketers and sales teams. But scratch the surface, and you'll see that SaaS is becoming a strategic tool for users large and small with an array of IT needs.

Take Medco Health Solutions Inc. in Franklin Lakes, N.J. The $45.5 billion prescription benefit management company has more than 20,000 employees, and compliance is a strategic part of its business. Jayme Antonoplos, director of compliance management, says employees must heed and monitor a broad range of regulations, including internal ethics mandates, prescription drug laws and the Health Insurance Portability and Accountability Act.

Until 2006, the company oversaw its compliance efforts with a patchwork of internally written applications. Since then, Medco has begun shifting to on-demand services from Cleveland-based Axentis Inc. One of SaaS's key advantages — speed — has already proved its worth during some recent acquisitions.

"Compliance activities have to start quickly," usually within 30 to 60 days of absorbing a new company, says Antonoplos.

BY THE NUMBERS

$6.8B 2008 SaaS revenue (Source: Gartner Inc.)

76% Percentage of U.S. organizations with at least one SaaS subscription (Source: IDC)

30% Percentage of programmers in North America working on a SaaS project (Source: Evans Data Corp.)

Trying to integrate an organization's compliance efforts with Medco's homegrown software would be tough, she says. But with Axentis, the acquired company can immediately adopt Medco's compliance services.

Surprised that such a big company is using SaaS for something other than customer-facing applications? In the early days, SaaS was, by design, confined to cookie-cutter applications. But now subscribers can configure the software to suit end users' needs. Here are a few things about SaaS that might surprise you.

IT'S NOT JUST FOR SMALL COMPANIES

SaaS advocates often point to the speed at which on-demand applications can be deployed. Keitaro Shigemasa, CIO at Link Theory Holdings Co., which produces the Theory brand of women's apparel, says time was a key factor in its decision to adopt Sky IT Group LLC's SkyPad business intelligence dashboard for point-of-sale analytics. And like Medco, New York-based Link Theory is a large company with multiple stakeholders in the system.

"We could have done it ourselves," Shigemasa says. "But we lacked the staff and the data warehouse tools. Plus, it would have taken three months or so to get it done."

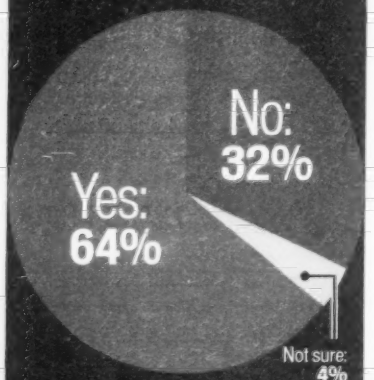
It only took four weeks to deploy SkyPad, he says. And Shigemasa praises the service because it requires little effort from his staff to train or support users.

Across the continent, Recreational Equipment Inc. (REI) in Kent, Wash., which reported $1.4 billion in sales for 2008, also had a need for speed. John Strother, director of merchandising operations, recalls that PivotLink Corp.'s eponymous BI service received data from REI on a Thursday and "by Tuesday, people saw it as a vital tool."

"I never saw anything happen that

Getting SaaS-y

ARE YOU USING SAAS NOW?



TOP 5 SAAS APPLICATIONS

1. Customer relationship management
2. Human resources management
3. Collaboration
4. Travel expense management
5. Sales incentive management

TOP 5 SAAS DRAWBACKS

1. Integration with existing data
2. Potential security risks
3. Offline connectivity
4. Vendor lock-in
5. Network bandwidth

TOP 5 SAAS BENEFITS

1. Fast application rollout
2. Monetary savings from a lack of capital investment
3. Option of plain-vanilla or customized implementations
4. More timely information
5. Lower overall TCO

SOURCE: EXCLUSIVE *COMPUTERWORLD* SURVEY, MARCH 2009; BASE: 70 RESPONDENTS

The Limits of SaaS

Software as a service is an excellent option for IT and business units to pursue. But there are times when the on-demand approach falls short.

One of the primary reasons that users cite for adopting the SaaS model is cost. "Cost management is a given as part of the CIO's role," says Doug Harr, CIO at Ingres. "And SaaS is cost-effective."

Research firm Gartner Inc. validates that view, with certain caveats. For example, if acquiring a packaged application wouldn't require hiring full-time workers or adding hardware, a subscription-based software service might not make long-term sense. Gartner advises users to estimate ongoing operational costs of a SaaS offering for at least three to five years and compare them with the projected investment in a packaged application for the same period, including depreciation on capital expenses. It's important to look at SaaS's long-term budget ramifications, even in these glum economic times, when short-term thinking can be tempting.

"SaaS is just a sourcing decision," says Harr, a strong advocate of the SaaS model. "At the end of the day, a CIO is trying to bring capability to the company, and sourcing should not be the first criteria."

John Strother, director of merchandising at REI, agrees. While acknowledging that the recreational equipment retailer "wants to own as little IT as possible," he says, "SaaS is a risk-reward model. There are things you need for your core business that are [too risky] to put outside the company."

A good rule of thumb, says Strother, is that it's OK to use SaaS if a service failure "would not prevent our getting the product to a customer." Otherwise, keep the software in-house.

Gartner analyst Ben Pring warns that three-fourths of SaaS deals have no service-level agreements. That's because many of the deals are struck by business units with no IT vendor management experience.

He says IT managers need to work with business units to ensure that data handled by on-demand providers is secure and that application availability will meet end users' needs. Pring says there's plenty of competition in the SaaS market, and IT departments can help their companies get the best deals.

– MARK EVERETT HALL

quickly," Strother says.

At first, 12 people in his department used PivotLink; now more than 200 employees throughout the company depend on it. REI likely will expand PivotLink into its supply chain group by 2010.

IT'S QUALITY SOFTWARE

Doug Harr, CIO at Ingres Corp. in Redwood City, Calif., explains that when it comes to software, the traditional choice for IT is "build or buy." For him, the choice is now "build with open source or rent."

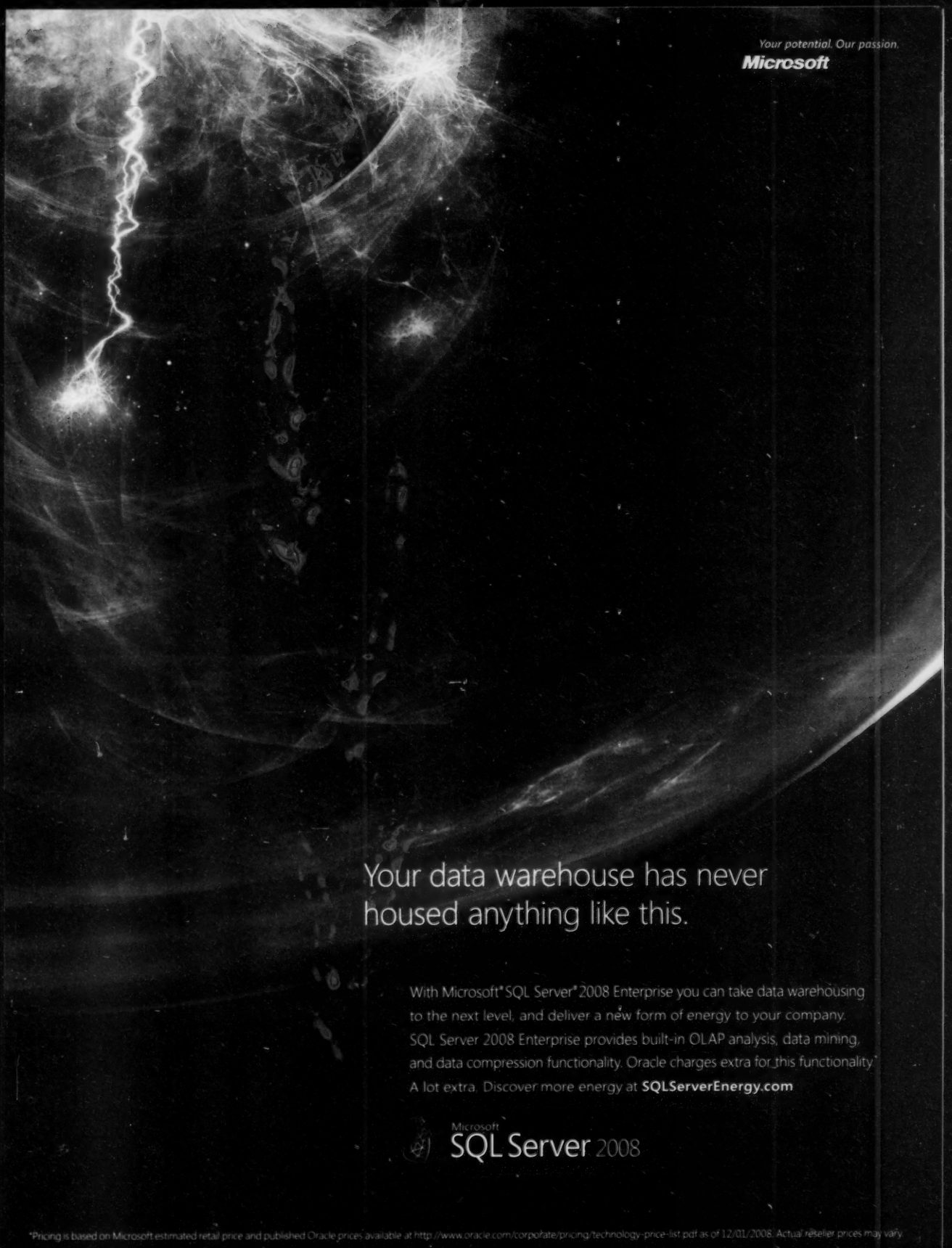
Harr acknowledges that he's on the bleeding edge when it comes to application deployment. He also notes that he had a greenfield opportunity when Ingres was spun out of CA Inc. in November 2005 with brand-new offices and an empty room for a data center.

Nonetheless, it's radical even these days for a CIO to eschew packaged applications in favor of a full SaaS and open-source environment. But Harr contends that it's not about ideology or parsimoniousness; it's about better software.

"It's not just more cost-effective to go with open source and software as a service; it's more innovative," he argues.

Ingres has three SaaS anchors — Salesforce.com's CRM offering, financial and accounting tools from Intacct Corp., and Automatic Data Processing Inc.'s human resources software. In addition, SaaS point applications, such as a sales compensation tool from Xactly Corp. and a contract management tool

Continued on page 22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From Outsourcer to SaaS Provider

Sometimes it takes fresh eyes to see new opportunities in an existing technology. LiveOps Inc. in Santa Clara, Calif., was founded in 2001 as a call center outsourcer. To be competitive with in-house call centers, LiveOps developed its software as a Web-based application on Linux. The application stack was designed to manage multiple customer campaigns simultaneously among tens of thousands of operators.

Azita Martin, vice president of marketing, says that because it was LiveOps' own system, it was designed to deliver a high level of uptime. The company charges users by the minute, so any downtime would lead to lost revenue.

LiveOps' system has a classic multitenant, high-availability SaaS architecture. In 2006, new CEO Maynard Webb saw an opportunity, and LiveOps began offering its tool as an on-demand application.

Matt Wise, senior director of external customers at West Marine Corp., a $630 million boat services company in Watsonville, Calif., says his company in January dropped plans to upgrade the PBX phone system and call center equipment in its Largo, Fla., facility, choosing instead to subscribe to the LiveOps service.

He says the cost of maintaining a dedicated facility contributed to the decision. But West Marine chose to use LiveOps SaaS instead of outsourcing for a couple of reasons. First, Wise says, there are more than 47,000 parts in its catalog of recreational and commercial boating products, and existing staffers have a deep knowledge of those products that would be difficult to impart to outsiders.

Also, in lean economic times there will be less work for employees in West Marine's 300 retail stores because there will be fewer shoppers. However, since LiveOps is a Web-based app that product-savvy workers can access from home, the company can expand its telemarketing campaigns and allow some employees to work as at-home call operators.

Without SaaS, Wise says, West Marine might have been forced to choose between reducing staff to support a new call center facility or outsourcing the operation to workers with far less know-how.

– MARK EVERETT HALL

Continued from page 20

from Aptus, are incorporated into the environment via an integration platform from Boomi Inc., another SaaS vendor (see "Wrapped in Complexity," page 23).

IT'S NOT JUST FOR CRM

Kenny Gravitt spent 33 years working at IBM and Lexmark International Inc. recovering used hardware assets and reusing the parts in refurbished goods or selling them. After a brief but boring stint in retirement, Gravitt started Global Environmental Services LLC, a 20-employee electronics recycling company in Georgetown, Ky., last summer.

Having been nurtured on IBM's sophisticated ERP systems, Gravitt understood how vital it was to track the growing inventory of gear and the tens of thousands of discrete parts in his 70,000-square-foot warehouse. But his initial Excel- and Access-based inventory system fell well short of meeting his needs.

That's when Gravitt discovered SmartTurn, an online inventory management service from San Francisco-based SmartTurn Inc. He credits SmartTurn with giving his customers sophisticated insight into his supply chain operations without a pricey IT investment.

The SaaS tool, he says, "has won us two contracts" with major computer vendors, who pay the company to recycle hardware in Kentucky but can track progress in real time over the Web with SmartTurn. "It's our advantage over the competition," Gravitt says.

While Ingres is on the extreme end of the SaaS adoption curve, other companies are certainly moving in that direction. Mark Davenport, IT director at Bosley, a Beverly Hills, Calif.-based men's hair-restoration subsidiary of the $850 million Aderans Holding Co., says the company has had more than a year of success using on-demand software. "We are looking to expand the SaaS model," he says.

One of Bosley's more notable SaaS tools is the TimeTrade appointment-scheduling service from TimeTrade Systems Inc. in Bedford, Mass. Davenport says the company's previous Siebel system had "gaping holes" that created double bookings, angering customers and forcing the company to revert to a semi-manual process.

With TimeTrade, Bosley's consultants and medical personnel can input their available times at all 19 surgical offices. Customers can then see those available slots and set appointments convenient to their schedules — and no overlap occurs.

Bosley also uses on-demand marketing software from Silverpop Systems Inc. in Atlanta and data-cleansing tools from Stalworth Inc. in San Mateo, Calif. And Davenport says Bosley is evaluating moving from its on-premises CRM software to a SaaS service from Oracle Corp. or Salesforce.com.

Like Harr, Davenport said he has been impressed with how easily SaaS tools can be configured to meet internal needs, noting that TimeTrade's appointment service "does 95% of what we need" because it was customized. But equally important, TimeTrade has been amenable to adding features that Bosley requires in future releases.

"We have to wait until April, but we don't have to make an investment for the new feature," Davenport says.

Although there are areas where IT shouldn't adopt the SaaS model, on-demand software's limitations are diminishing. And for new operations — whether start-ups, corporate spin-offs or simply nascent business units in existing companies — it's difficult to justify investing in IT infrastructure, given the depth and breadth of SaaS offerings.

As Ingres' Harr says, with only a slight exaggeration, "Just put a wireless router in the corner, and you're done." ■

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TIPS FOR SUCCESSFUL INTEGRATION PROJECTS

1. Develop an overall integration strategy that includes SaaS.
2. Take time to fully understand business process requirements before starting integration work.
3. Hire an information architect with a deep understanding of the business process requirements as well as the technology issues.

One-off integrations lead to trouble as SaaS use multiplies. But IT will get help this time.

By Robert L. Mitchell

Wrapped in Complexity

IT WAS ALMOST too much of a good thing. When Hines Interests Ltd. launched its real estate investment trust business, Hines Real Estate Securities Inc., as a complement to its real estate development business, it built the IT infrastructure around a bevy of SaaS products. But the need to exchange data between various hosted applications — transaction processing, CRM, literature-fulfillment, and expense and vendor payment systems — created a tangled web of integrations linking SaaS to SaaS and SaaS to on-premises applications.

It's the SaaS twist: Add too many applications, and you might to find yourself back in the bad old days, when the various applications in the corporate infrastructure wouldn't talk to one another. "When you're heavily reliant on SaaS, you're putting yourself in the position of siloed data once again," says Benny Lasiter, business systems architect at Hines Real Estate Securities.

At least Lasiter had a plan. In many organizations, SaaS offerings sneak in through the departments within individual business units, often without the knowledge of IT. Rogue projects have become "the profile of SaaS" in the enterprise, says Ron Papas, senior vice president and general manager of Informatica Corp.'s on-demand group.

Later, as those applications multiply and grow, problems arise. "You do it once, twice, and five times later, you have these disparate solutions coming into the IT infrastructure. There's no strategy, no consistency, and there's a problem," says Benoit Lheureux, an analyst at Gartner Inc. "Most companies don't even know that they should have a SaaS integration strategy, let alone align that with their internal B2B integration strategy. That is a huge problem."

But you need not go it alone. As IT executives are working through their SaaS tangles, they're developing fresh integration strategies and getting help from new tools and integration specialists.

KEY STRATEGIST REQUIRED

"It is essential to have a central architect with an overall picture of the data, someone who understands the business side of things and the technical implementation of that," says Lasiter. Otherwise, unexpected problems are bound to arise.

For example, most SaaS integration projects touch back-end business applications, such as financial systems. As these links multiply, they swamp the central system. "All of a sudden, the performance of the finance application is crawling because you have all of these things connecting to it," says Rick Nucci, chief technology officer at Boomi Inc., an integration tool vendor in Berwyn, Pa. "It's like the old EAI days. You end up with this spaghetti code effect."

The flexibility of SaaS and the ability to change vendors quickly also present challenges, such as how to reconcile new SaaS applications with older data. For example, Lasiter switched SaaS vendors in May. "Now, here we are doing end-of-the-year processing, and we

have data from two vendors. All of that has to fit together for year-end reporting," he says. In the SaaS world, he says, things constantly change. It's up to IT to manage all of the moving pieces.

Those headaches can be avoided by having an integration strategy that includes SaaS. But that runs counter to the ad hoc, need-it-now culture into which many SaaS implementations are sold.

Ad hoc isn't always a bad thing, says David Inbar, director of marketing at Pervasive Software Inc. in Austin. "It may violate a lot of textbooks, but that's how a lot of business gets done — and gets done fast." But at big companies where dozens, or hundreds, of SaaS implementations can pop up, ad hoc projects can create a mess.

For Lasiter, a structured integration framework evolved over time. Hines turned to SaaS because the real estate securities business had to be up and running quickly. It needed a flexible system that allowed quick changes, because business processes were still evolving.

Lasiter also wanted all of the data in a common repository for reporting purposes, so he decided to create an on-premises database that would serve as the core repository and traffic cop for data exchanges. He used a tool from Pervasive to create the integration links. "We built an insulating layer of integrations that allow us to maintain a central hub of data for reporting purposes," he says. And the design allows Hines to switch SaaS vendors fairly easily.

"We didn't try to do it all at once," he says. Instead, Hines added the integrations one by one over two and a half years. About 20% of the effort was coding. The rest involved defining business processes, analyzing data and figuring out the reporting requirements.

While Hines used on-premises middleware, it's becoming increasingly popular among other companies to use integration-as-a-service (IAS) offerings from vendors such as Boomi and Informatica. These provide a common integration hub for all SaaS-to-SaaS and SaaS-to-on-premises integrations.

"The main reason to go with hosted integration tools is rapid development," says Papas. While on-premises software tends to be upgraded every 12 to 18 months, SaaS vendors may revise their software three times or more each year. IAS vendors can help ensure that customizations for customers continue to work.

Zamil Industrial ITG, a construction products manufacturer in Dammam, Saudi Arabia, had no problems integrating its service-oriented architecture middleware with a service management application from Service-now.com in Solana Beach, Calif. "We implemented our SOA-based Oracle Fusion middleware before we went for Service-now.com," says Ahmed Abdrabalnabi, service planning manager at Zamil. Integrating it with employee information residing in Active Directory and an on-premises human resources application was "as easy as drinking a glass of water." The process took just a few days, he says, but that's because integration requirements were evaluated upfront to make sure Service-now.com was the right fit.

Although that time frame worked for Zamil's implementation, it would be overly optimistic for most integration projects. About 80% of integrations use basic technologies such as file transfers, and projects with SaaS applications tend to roll out faster than the 12- to-18-month window that's typical for traditional on-premises applications, says Annrai O'Toole, vice president of integration at Workday Inc., a provider of hosted applications in Pleasanton, Calif. Nonetheless, a typical integration project involving Workday systems, including the migration and cleaning of data, specification of business processes, and systems configuration, still takes around 70 days. ■

WHOSE BURDEN?

How are you tying in SaaS apps with your company's legacy data?

Our IT department is writing the hooks	29%
Our SaaS vendor is helping with integration	29%
We're not integrating with legacy data	16%
The business units that use SaaS deal with integration	13%
We're working with a SaaS integration specialist	4%
We're using a specialized SaaS integration tool	2%
Other	7%

WHO'S IN CHARGE?

IT department	71%
End-user departments	16%
Joint management	9%
Other	2%
Don't know	2%

SOURCE: EXCLUSIVE *COMPUTERWORLD* SURVEY, MARCH 2009. BASE: 45 RESPONDENTS

Three Ways Integrations Can Get Tangled Up

Things can go wrong even after SaaS applications are integrated with the rest of your infrastructure. Pervasive Software says these are three of the most common challenges:

1. New features that raise the bar: The SaaS vendor adds new features that you would like to use. Example: The vendor offers more granular reporting, but the process flows you've built need to change to take advantage of that.

2. "Improvements" to the SaaS vendor's API: SaaS vendors may revise application programming interfaces several times per year, and that can cause problems with customized integration work. Example: Outbound messaging is a mechanism that notifies another application that a change to the data has occurred and that an update may be needed on the other end. "For various reasons, SaaS vendors have had to change how that signal appears to the outside world," says David Inbar, director of marketing at Pervasive Software. That forces changes that may appear to be small details but still require altering your integration process or mapping.

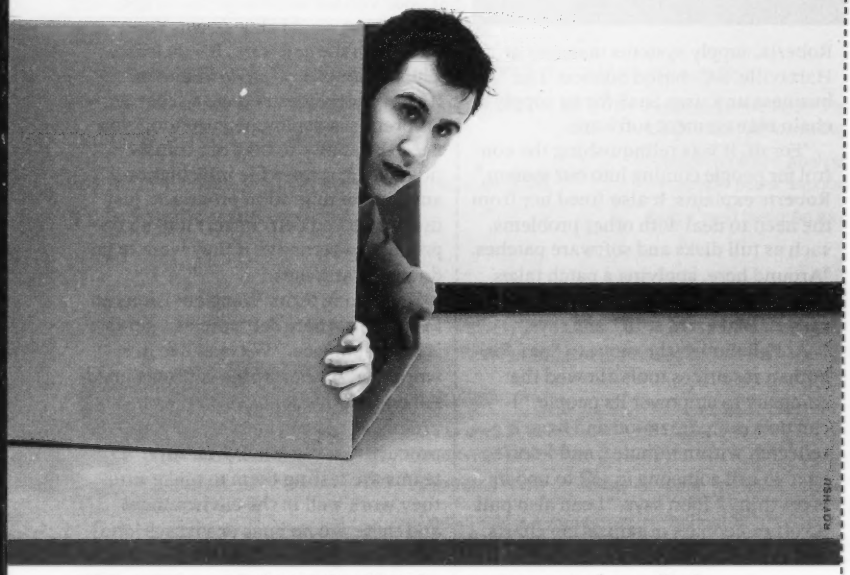
Salesforce.com Inc. strives to ensure that updates don't break the way its API processes transactions. "Where that may fall down is if we change the behavior of the API calls. If it behaves differently, the customer's integration code may not know what to do," says Ariel Kelman, senior director of product marketing at Salesforce.com. To avoid such problems, the company keeps old API versions online.

3. Self-inflicted wounds: You make changes to your business processes that break the system. Example: You build a system for purchase orders and then decide to split the workflow for small and large customers, changing the process and information flows through one or more SaaS or in-house applications.

– ROBERT L. MITCHELL

Newfound Freedom

How breaking free from applications work is helping these IT execs tap into innovation. By Stacy Collett



WHEN STEVEN JOHN took over as CIO at specialty chemical manufacturer H.B. Fuller Co., he inherited a North American payroll system implementation that was expensive and going nowhere.

The business units hadn't participated in the technology decision, and the project was bogged down with customization issues and other concerns. John chose to relinquish control of payroll software and switched to software as a service, or SaaS.

"I wanted to do an implementation that was simple and straightforward — to configure but not customize — and see the benefits of a standard, global platform," John says. "This was a way to teach, save money and outsource a noncore system." Giving up control was an easy trade-off compared with the headaches he would face trying to fix the existing software.

Indeed, SaaS has become a viable alternative to in-house enterprise software. Those who were once concerned about losing the ability to customize applications, control upgrades and execute changes are finding out that control isn't all it's cracked up to be. Here's a look at how some IT executives resolved their own software "control issues."

CUSTOMIZE VS. CONFIGURE

Today's SaaS offerings allow more configuration choices, frequent upgrades and more end-user collaboration than their predecessors did.

"You're getting a lot more innovation," says Ray Wang, an analyst at Forrester Research Inc. "The products are a lot more configurable than what most people have in their own applications. You can change fields, rename things, and move attributes and workflows. So there's a good level of control there."

What's more, the configuration choices are more refined and well thought-out, giving users a few good choices instead of myriad options. John found that configuration rather than customization allows H.B. Fuller to maintain its "lean core."

"I believe that more standardization leads to more agility," John says. "SaaS allows us to say, 'This is good enough . . . for what we need.' So you don't end up with these horrible situations where you have these highly customized systems. We go with [configuration] option A, B or C. If one of those three doesn't meet our need, we can try to influence the next release. But in most cases, A, B or C is going to meet the need."

SaaS offerings with limited choices have also improved processes at Eden Prairie, Minn.-based 2nd Wind Exercise Equipment, which turned to SaaS for its CRM, sales and financial applications.

"We wanted to use [software] that will expand and contract with [our business]," says Chief Financial Officer Tom Kelly. "We've actually improved our processes by using these systems. Instead of looking at everything the system doesn't have, just use the tools!"

If your application needs customization beyond what's offered, SaaS may not be the answer. "If you like writing your own code, building stuff or changing this all the time, it might not be for you either," Wang says. "But maybe you want to look at platform as a service

Does Your SaaS Provider Have Enough Security?

The security stakes rise when companies use SaaS for human resources management or other functions that include sensitive information like Social Security numbers or home addresses. You should take these four steps to ensure that your data stays secure.

1. Perform a security audit. It's essential to conduct audits of all prospective SaaS providers. "In some cases, their security may be better than your own, but you have to make sure of that," says H.B. Fuller CIO Steven John. "Do your due diligence and make sure they have the highest standards."

2. Know when SaaS isn't right for you. "If you're a government entity that requires all your data to remain on-site, SaaS can't help you there – or if your data has to stay in country," says Ray Wang, an analyst at Forrester Research.

3. Trust the experts. If a SaaS provider has a security breach, it can be sunk as a business, so SaaS vendors tend to be highly motivated to make sure data is secure. "But again, I would never take that at face value, so you have to do the audit," says Jennifer Roberts, a supply systems manager at Sonoco Products.

4. Get it in writing. If the business unit is leading the implementation, ask for the vendor's security protocols ahead of time and bring in IT, Roberts says. Then write security protocols into the contract. "It should be a joint decision between IT and business," she says.

– STACY COLLETT

as an approach. It gives you the best of both worlds. You run SaaS, and you host the application with a PaaS approach."

LOSING CONTROL VS. GAINING EMPOWERMENT

Capital equipment manufacturer Pearson Packaging Systems uses SaaS for CRM and sales force automation. President and CEO Michael Senske says he doesn't feel like the company has given up control of its software. Rather, SaaS has freed Pearson from software maintenance. "We don't physically have control of any hardware, but upgrades and infrastructure are taken care of for us. It's on a more stable, more current platform — probably better than anything we would be maintaining ourselves. We can focus on functionality. From our perspective, we don't miss it at all."

Sonoco Products Co., an industrial and consumer packaging provider with $4 billion in sales, manages relationships with about 18,000 suppliers. "We really didn't want to bring them all into our network," explains Jennifer Roberts, supply systems manager at Hartsville, S.C.-based Sonoco. The business unit uses SaaS for its supply chain management software.

"For us, it was relinquishing the control for people coming into our system," Roberts explains. It also freed her from the need to deal with other problems, such as full disks and software patches. "Around here, applying a patch takes forever. With SaaS, someone else manages all that extra stuff," she says.

At H.B. Fuller, the move to SaaS for human resources tools allowed the company to empower its people. "I can do a reorganization and have it reflected within minutes, and I don't have to call someone in HR to update everything," John says. "I can also pull up other people's organization charts and see where they are and what they're doing and better understand the organization."

When it comes to managing SaaS, neither the IT department nor the business unit using the software should be eager to relinquish control.

"The buying decisions are shifting from IT to the business leaders," who often opt to charge the software as an expense rather than wait for approval through the capital budget committee, Wang says. Still, he adds, "it's very important to engage IT in these SaaS decisions because there are overall IT architectures and blueprints to consider." It becomes very costly when applications don't integrate or interoperate well with one another.

"It's good to at least have some parameters and policies in place so that people understand what type of apps will work better within the environment, what will be cheaper to share information and data with," says Wang.

MITIGATING OTHER CONTROL RISKS

One of the problems with SaaS is that if your vendor were to go bankrupt, everything would shut down. You don't own the software. It's on lease. The question is, what *do* you own? If the vendor doesn't have a separate on-premises deployment option, "you need the ability to take out transactional data, master file information, any kind of migration programs, just in case, so you can convert it to an on-premises alternative if they were to go down," Wang says.

In the long term, Wang envisions an IT culture where software as a service is commonplace. "We may live in a world where everything is provisioned. All our applications don't stay on premises, and business leaders are out procuring applications," he says. "IT teams are testing them to make sure they work well in the environment and there are no bugs or viruses [and] things integrate well, and basically [the IT staff] will spend a lot of time provisioning services and implementing, integrating, doing installs. That's where we envision the market in 2020." ■

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"We don't physically have control of any hardware, but upgrades and infrastructure are taken care of for us. It's on a more stable, more current platform – probably better than anything we would be maintaining ourselves.

MICHAEL SENSKE, PRESIDENT AND CEO, PEARSON PACKAGING SYSTEMS

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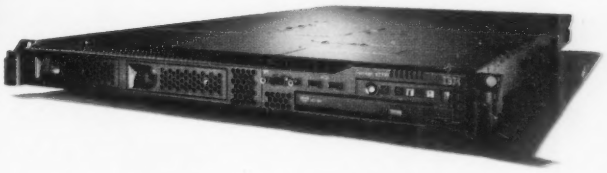

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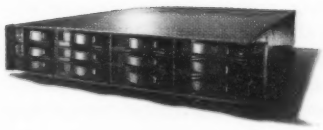

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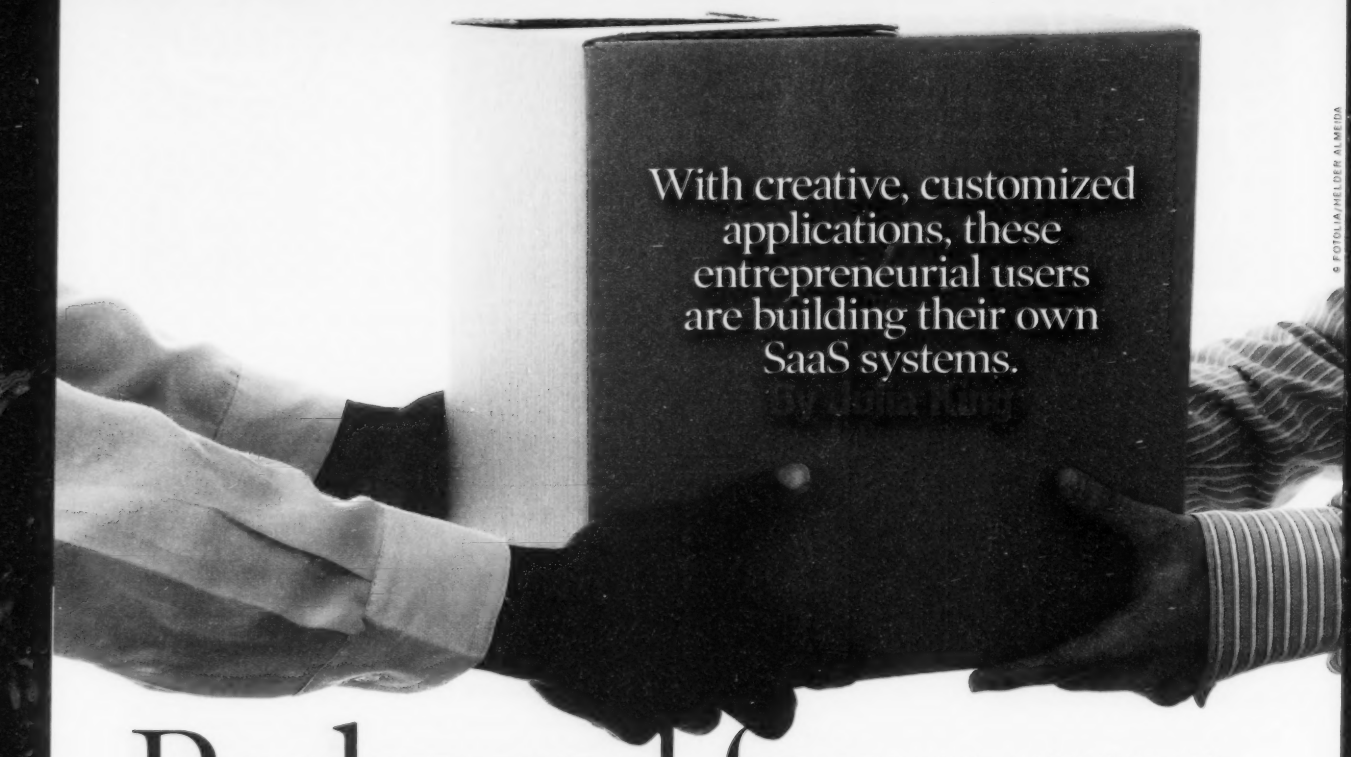

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Packaged for Delivery

JUST WHEN YOU THOUGHT you had a grip on your techie acronyms, along comes another one that experts predict spells the future of software development. The good news is that this one has the potential to build new business opportunities, too.

Platform as a service, or PaaS, is essentially a virtual tool bag with all the high-tech gadgetry you need to build, test and deploy custom software for every imaginable application. Rather than buying and installing application building blocks on their own hardware, PaaS users tap into Web-based integrated development environments such as .Net or Java to quickly build exactly what they want. And in some cases, they in turn sell what they build or outsource it to other companies.

"Think of PaaS as a sandbox where you can build an application that, once built, you can also run on the same [Web-based] platform," says Kevin Weiss, CEO of Author Solutions Inc., a $100 million publishing company that tapped PaaS to build what he calls "a full-scale publishing ERP system" in a span of just four months.

"PaaS is where and how you build the application; SaaS is what you've got when you're done with it," Weiss explains.

The company hired Appirio Inc., a San Mateo, Calif.-based systems integrator, to develop its Gemini custom-publishing system on Force.com, Salesforce.com Inc.'s PaaS offering. Author Solutions uses the Gemini software to track all content, including the millions of edits it makes to the thousands of manuscripts it publishes each year.

"Gemini includes content management and an extensive workflow system with an enormous number of triggers along the way because there's a lot of tracking back and forth between authors and our publishing experts," Weiss explains.

The system, which has been up and running for almost a year, has allowed Author Solutions to execute its own business plans much faster and more cheaply, and to take on outsourced work from other companies — thus generating new revenue.

Some of the company's outsourcing customers want to track the workflow of their manuscripts differently. "But this is pretty easy to do on the Force.com side, because you can go in and move triggers around and recon-

"We were initially thinking of our customers as companies that are already software vendors who want to offer SaaS. But there's no reason that it has to be a previous software vendor.
BRYAN DOERR, CTO, SAVVIS INC.

figure an application to do what you want, rather than write hundreds or thousands of lines of code" to make a change, Weiss notes. "As we bring on more services and partners, we just make a copy of what we've done and make a few changes based on what our partner needs, and we're ready to go. The cost differential is an order of magnitude different for us," another big benefit of using PaaS, he says.

According to Jeffrey M. Kaplan, a SaaS analyst at consulting firm ThinkStrategies, PaaS offers more than an opportunity for users to cut software development costs. "The functionality allows companies to generate new business opportunities for themselves," he says.

"With PaaS, you can build or customize your own applications very quickly and then run them on the platform," says Appirio CEO Chris Barbin. Appirio, for example, has built its own software license management and human resources applications, which it runs in the cloud. Other software developers can build applications and add them to various PaaS ecosystems, where they can be licensed by other Web-based users.

HIDDEN MARKET

"We were initially thinking of our customers as companies that are already software vendors who want to offer SaaS," says Bryan Doerr, chief technology officer at PaaS start-up Savvis Inc. "But there's no reason that it has to be a previous software vendor." User companies are also welcome. In fact, Savvis has created a Web-based sandbox "where any customer can drop their software and see if it could be virtualized, and test whether or not to proceed with a hosted version," he says.

Doerr says PaaS and SaaS "offer a new way to capitalize on intellectual property and are lighter-weight in terms of investment costs."

That is what drew Paul Minor, CEO of Digicontractor Corp. in Tarzana, Calif., to Corent Technology Inc. A former real estate developer, Minor had an idea for Web-based software that would allow users to derive physical dimensions and exact measurements from any digital image. For example, engineers and contractors can upload digital photos to obtain precise measurements of land parcels. "We also have some unique applications, ranging from nuclear power facilities that want to measure the dimension of rods in reactors to scientists who want to measure whales in the ocean as a way to determine the health of the food chain," Minor says. Looking ahead, the company is aiming to set up kiosks in big-box home stores like Home Depot and Lowes.

Digicontractor explored the option of developing the software in-house and hiring it out to a traditional software-development firm but determined it would be too expensive, especially for a start-up, Minor says. What Corent offered is "a turnkey process," he says. "We were able to have our core application up and running in three months, and now we can do our own software changes without having to hire a developer." Digicontractor has also licensed its uPhotoMeasure software to HomeTips.com, which is running the application under a SaaS model on its Web site.

Getting software up and running fast and on the cheap is appealing to all companies, especially in this brutal economy. That's one reason why early adopters and analysts alike predict that the PaaS market will become large very quickly.

"I think you're going to see more people move to this platform," says Author Solutions' Weiss. "Right now, it's a sweet spot for companies my size — in the $100 million range — but I don't see any reason why a large enterprise wouldn't think about putting pieces of their application portfolio on a PaaS exchange, especially applications you want to put up real fast and test out." Bottom line, he says: "I don't see this as a pure small and medium-sized business play." ■

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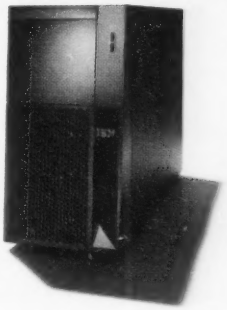

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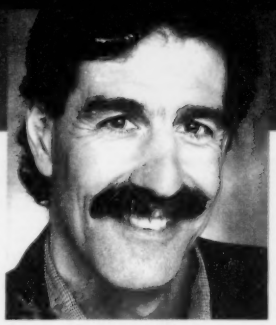


Five Myths About SaaS

DESPITE A growing track record of success, software as a service is still misunderstood by a surprising number of IT and business decision-makers. It's time to put to rest some misconceptions about SaaS. Let's bust the five most common myths.

Myth No. 1: SaaS is a peripheral trend. Take a look at the numbers, and you'll see that SaaS is becoming a mainstream movement. My firm, ThinkStrategies, has been conducting SaaS customer surveys in conjunction with Cutter Consortium for four years, and our latest survey, in October, found that SaaS usage had jumped from 32% of respondents in 2007 to 63% in 2008.

Equally important, over 90% of the survey respondents who were using SaaS said they were satisfied with the model and planned to renew their subscriptions and expand their use of SaaS offerings. Moreover, they said they would recommend SaaS to their peers. Those are satisfaction and referral levels that traditional software vendors can only dream about.

Myth No. 2: SaaS offers just one type of application. In fact, SaaS tools vary in form and function as much as the overall assortment of software available today.

Although all SaaS, by definition, is available via subscription and is designed so a single code base can support multiple users, there are countless ways in which SaaS is packaged and priced. In fact, our online directory of SaaS providers now lists more than 950 companies that offer SaaS across 80 application, industry and technology areas.

Users can also configure a growing number of SaaS applications to meet their individual needs (see "SaaS Surprises," page 18). While SaaS can't be customized to the same extent as traditional applications, that isn't necessarily a bad thing. Many enterprises have customized their in-house applications to such a degree that the software can no longer be fully supported by the vendors, nor can it be easily upgraded.

The business and IT decision-makers I talk with are recognizing that a high level of customization can be counterproductive.

Myth No. 3: SaaS just offers skinnier versions of more sophisticated applications. There's no question that most SaaS applications have succeeded because they are simpler to deploy, use and maintain than in-house applications are. But that doesn't mean users are sacrificing functionality when they move to SaaS offerings.

Instead, we've seen a steady growth in enterprise adoption of SaaS. Indeed, large organizations are Salesforce.com's fastest-growing customer category.

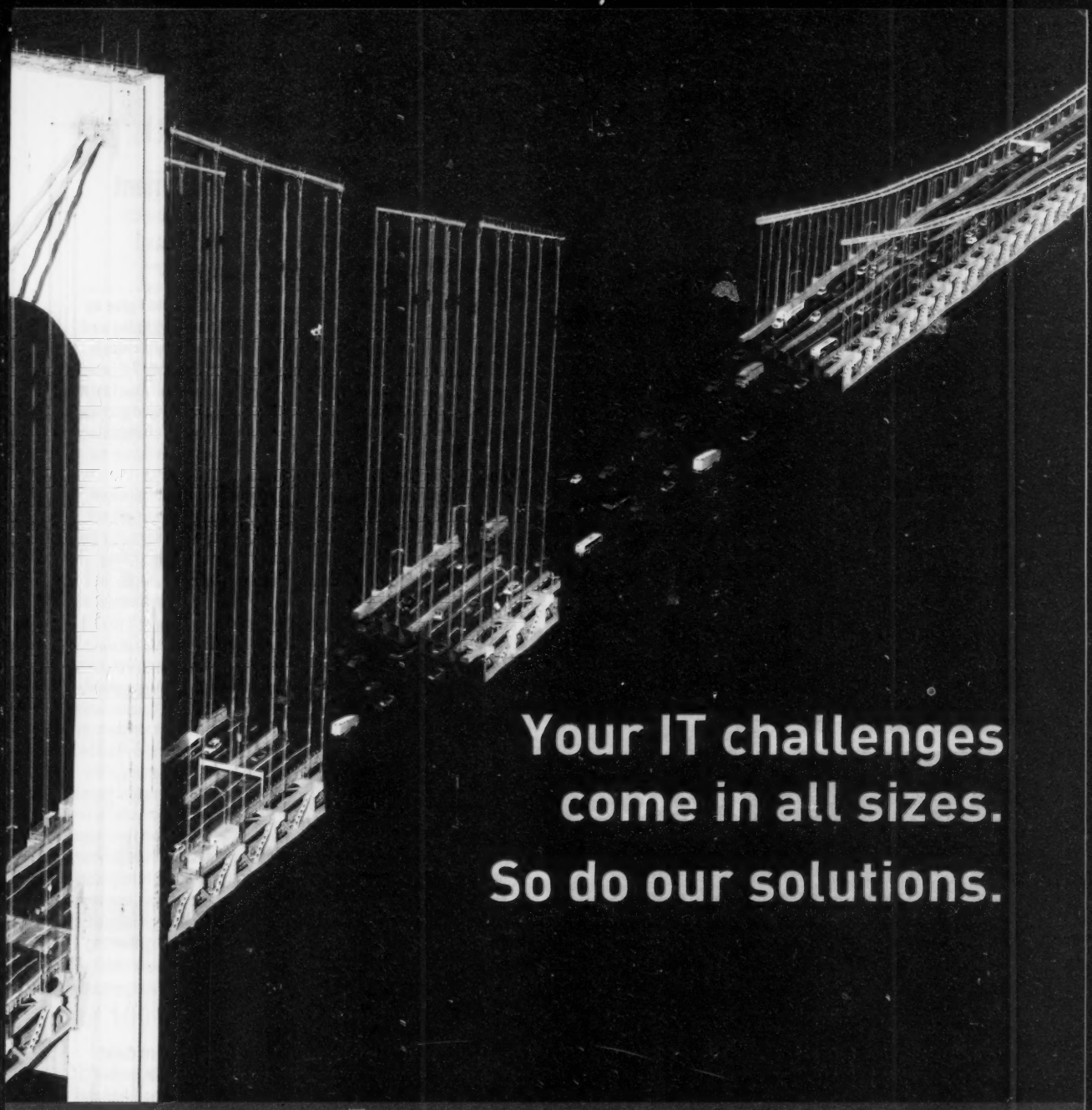
Last year, GE and Flextronics International announced companywide SaaS deployments — of Aravo Solutions' supplier information management system and Workday's human capital management system, respectively.

Myth No. 4: SaaS is less reliable and less secure than on-premises applications. Although service disruptions experienced by Google or Salesforce.com get plenty of attention, those types of incidents don't happen very often, and they don't last as long as many enterprise outages. And there hasn't been a major compromise of a SaaS operation reported yet, even as we continue to read regular accounts of security breaches in traditional IT environments.

Myth No. 5: IT professionals are uniformly opposed to SaaS. While some might worry that SaaS is too risky or could threaten their livelihoods, the number of people who feel that way is dropping. More IT professionals are recognizing that SaaS not only rids them of the day-to-day hassles of traditional software, but also that a new generation of SaaS-based IT management software can actually help them better manage their own IT operations (see "Newfound Freedom," page 25).

While myths about SaaS linger, the realities are quickly overtaking them. ■

Jeffrey M. Kaplan *is managing director of ThinkStrategies* (www.thinkstrategies.com) *and founder of the SaaS Showplace* (www.saas-showplace.com). *Contact him at jkaplan@thinkstrategies.com.*



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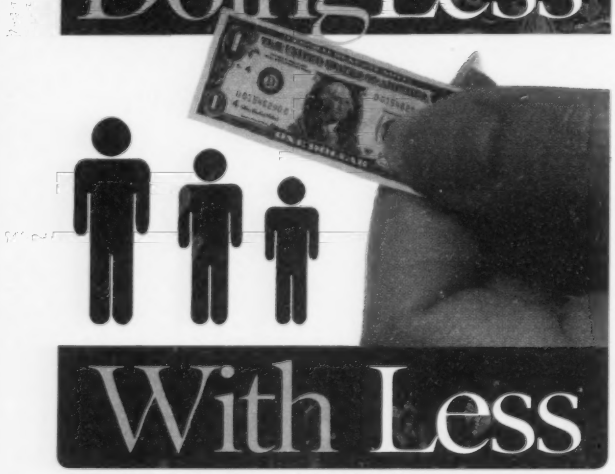

Are you being asked to do more in the wake of layoffs of co-workers? If so, are you actually doing more? Probably not, according to a survey conducted in December by Leadership IQ. When the research and training firm polled 4,172 workers at 318 companies that had recently laid off employees, 74% of the respondents said their own productivity has declined. Other findings:

87%	of surviving workers said they are less likely to recommend their organizations as good places to work.
64%	of surviving workers said the productivity of their colleagues has also declined.
81%	of surviving workers said the quality of service that customers receive has declined.
77%	of surviving workers said they see more errors and mistakes being made.
61%	of surviving workers said they believe their companies' future prospects are worse.

PAGE COMPILED BY JAMIE ECKLE.

■ **ASK AN IT LEADER**

Mark O'Gara

The **vice president of infrastructure management** at Highmark Inc. discusses **dealing with the boss** and users, and **the best sectors** in this economy.

I've been in a new job for about five months. When I arrived, I mentioned some things to my boss's boss that I had noticed could be done better, making us more efficient or saving us money. He was thrilled. Since then, though, I've had the feeling that my boss is freezing me out, giving me routine and boring assignments. I think he figures I made him look bad. I realize now I should have handled things differently, but that doesn't help me now. How can I make amends and set things right? Transitioning into a new organization is never easy. What appear to be quick and easy fixes to long-standing problems are usually much more difficult to resolve than you realize. Sit down with your boss and have a frank discussion on your comments to his boss. Chances are that the problems you mentioned to your boss's boss are known within the organization. Next, I would clarify your roles and responsibilities to ensure you have alignment with your boss. Remember: Your job is to make your boss look good!

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QUESTION?
If you have a question for one of our Premier 100 IT Leaders, send it to **askaleader@computerworld.com**, and watch for this column each month.

I'm always reading in the trade press how important it is for IT pros to understand users and their needs. I'd like to get ahead, so I've tried this, but I just get frustrated over how clueless most users are. I can't seem to react to them with anything but irritation.

OK, it's not a great attitude, I can see that. Can I change, or should I give up my hopes of advancing and just hide out in my cubicle slamming out code? If I were to rephrase your question, I might ask it like this: Do I need to interact with my customers to understand their needs and so advance my career in IT?

To me, advancing your career means that you do your job well and help solve problems. For the IT organization to be successful, everyone needs to play their position and support the business needs of the company. If you are a programmer, you do not need to interact directly with end users to advance your career. However, there needs to be a function within IT that has a direct interface to the customer, depending on the size and maturity of the organization. You can advance your career by helping your peers do new things, volunteering to help solve problems, learning new technologies, or simply by excelling at writing great code that minimizes demands on network and computing resources.

Which sectors are most likely to be a safe harbor as we ride out the financial crisis? Health care, government and energy are well positioned. We are all affected by the economy, and the only variables we can really control are our performance and our outlook when we show up to work every day. We are all charged with managing our careers, and that requires connecting with people. Read the book *Never Eat Alone*, by Keith Ferrazzi, and build a network that you can leverage throughout your career.

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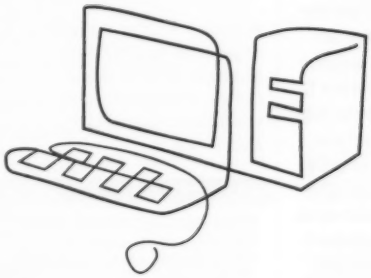

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Power Play

This paycheck company division has 180 users working in a converted warehouse with *very* dirty power. "Our IT budget allowed most of the things we needed – except a UPS for the server room," says a net admin pilot fish on the scene. "After carefully studying the electrical requirements, I came up with what seemed to be the best and most cost-effective solution: a UPS unit costing $12,000. It would handle all our current needs and allow for plenty of growth. I gave the division's bean counter the full story in glorious detail: what we needed, how much it would cost and the fact that this would eliminate the power issues we regularly had to deal with. He asked me, 'So . . . how much does it actually *cost* us to be down for a couple of hours?' Apparently my answer wasn't satisfactory, because my request was denied as unnecessary. Three months later, the building lost power when an accident took out a transformer. The resultant surges knocked out a $3,500 riser card in my main network switch. I took the now-dead card into the bean counter's office, set it on his desk and said, 'OK, we've just spent a quarter of the cost of the UPS, and we're no closer to having it than we were. Can I have my UPS now?' My purchase request was approved."

Unlikely Puzzle Solved

IT manager pilot fish gets a call from a remote site's "IT contact" – the designated user who handles minor procedures when there's a problem. "This IT contact called to notify us that a piece of equipment was beeping," fish says. "After talking with her for a few minutes, we realized that the beeping equipment was their uninterruptible power supply, and everything was plugged into it. She said she had never seen that power supply there before. I told her that we would order her another one and have it shipped the next day. I also told her to take the equipment down that was plugged into it and just plug everything into an outlet until the new one came. She gasped and said, 'Never mind, we can get another one for free. I just realized that this is not our equipment! It says UPS on the front of it, so I will call them and have them send us another one right away!' "

Safety First

Contractor is doing some construction work in this data center. "They needed to rope off the area where the work was being done," reports a pilot fish. "They tied the rope to the safety cover of the emergency power off switch. Of course, somebody ran into the rope and knocked the cover off. This set off the alarm, so the workman pressed the button to turn off the alarm. Well, the alarm was shut off – along with the entire data center."

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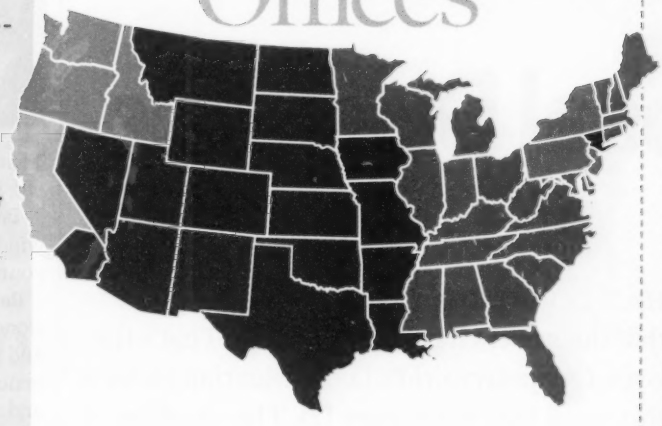

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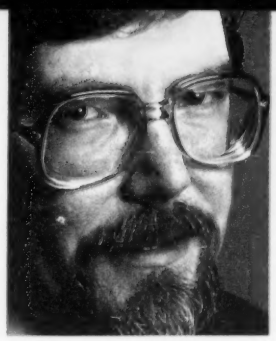
■ FRANKLY SPEAKING

Frank Hayes

Disposal Discipline



WHAT DO WE DO about all these PCs, now that their users have been laid off? That's the issue *Computerworld*'s Lucas Mearian looks at this week (see story, page 12). The situation isn't pretty. Many companies have no well-defined process for decommissioning PCs, and those that do still aren't prepared to deal with so many at once.

It's a security issue. A cost issue. An accounting issue. A mess.

Software is easy: You decide how many licenses to keep and dump the rest. But with hardware, you have to literally dump what you don't keep — hard drives full of sensitive data, PCs that have to be taken off the books — all as cheaply as possible.

There's no one-size-fits-all way to handle them. But here are a dozen do's and don'ts for dealing with drives, data and disposal:

Do make a PC decommissioning checklist — and make sure *every* item on the checklist is completed before the PC is tagged as ready for disposal.

Do decommission each PC before it's removed from the ex-employee's desk. It has power, and it's in running condition, so run software to thoroughly erase the hard disk immediately, using tools such as Shred or DBAN booted from a CD. That way, by the time you start hauling away the hardware, you know it's safe to dispose of.

Don't remove hard drives. What are you going to do, store them? That's an ongoing cost with no productive benefit — and a temptation for some bean counter to ship a closet full of old drives to a recycler without warning.

Don't decommission hard drives by degaussing them, drilling holes in them, smashing them with sledgehammers or blasting away at them on a firing range. That's a waste of time, often ineffective and frequently dangerous. **Exception:** Physically demolishing obsolete equipment may help IT staffers to blow off steam. But thoroughly wipe the hard disk first anyway, and then use safety glasses and protective gear.

■ Do make sure you run your PC disposal plans past your CFO's people first. They have to write this hardware off somehow.

Do track the total cost of decommissioning each PC. It's part of the cost of laying off an employee, and that's how it should be handled for accounting purposes.

Do make sure you run your PC disposal plans past your CFO's people first. They have to write this hardware off somehow. Was it expensed? Capitalized? Will it go to a recycler? A school or charity? All these things affect balance sheets and taxes.

Don't send decommissioned PCs off to recyclers if you can avoid it. That's a cost with no benefit. But if you do . . .

Don't trust recyclers to wipe hard drives. Do it yourself.

Do send decommissioned PCs off to schools and charities. That's a tax benefit for your company and a practical benefit for the group that gets it.

Do label every ready-to-dispose-of PC with the name of the IT staffer who decommissioned it, its asset tag numbers, the time and the date. Also log all that information separately and forward it to your CFO.

Do keep some PCs after they've been decommissioned. You'll need some for parts and some to swap in when remaining employees have PC problems. Decide in advance the criteria for keeping a PC.

Don't keep all decommissioned PCs. You'll end up with the ongoing cost of storing PCs that will rapidly decline in value. In the end, you'll have to ship them off anyway. **Exception:** If your CFO says to keep them for some arcane accounting reason, do what the CFO says. He's the one who would be screaming about the storage cost anyway. ■

Frank Hayes *is Computerworld's senior news columnist. Contact him at frank_hayes@computerworld.com.*

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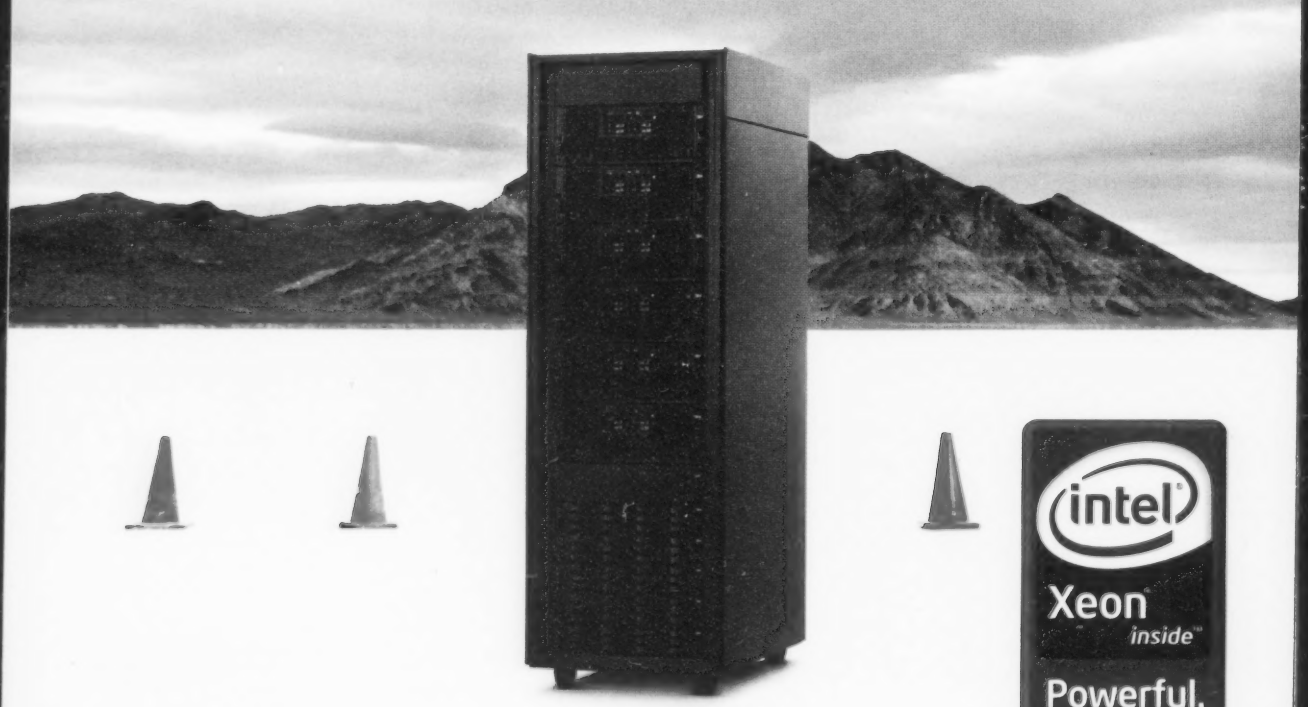

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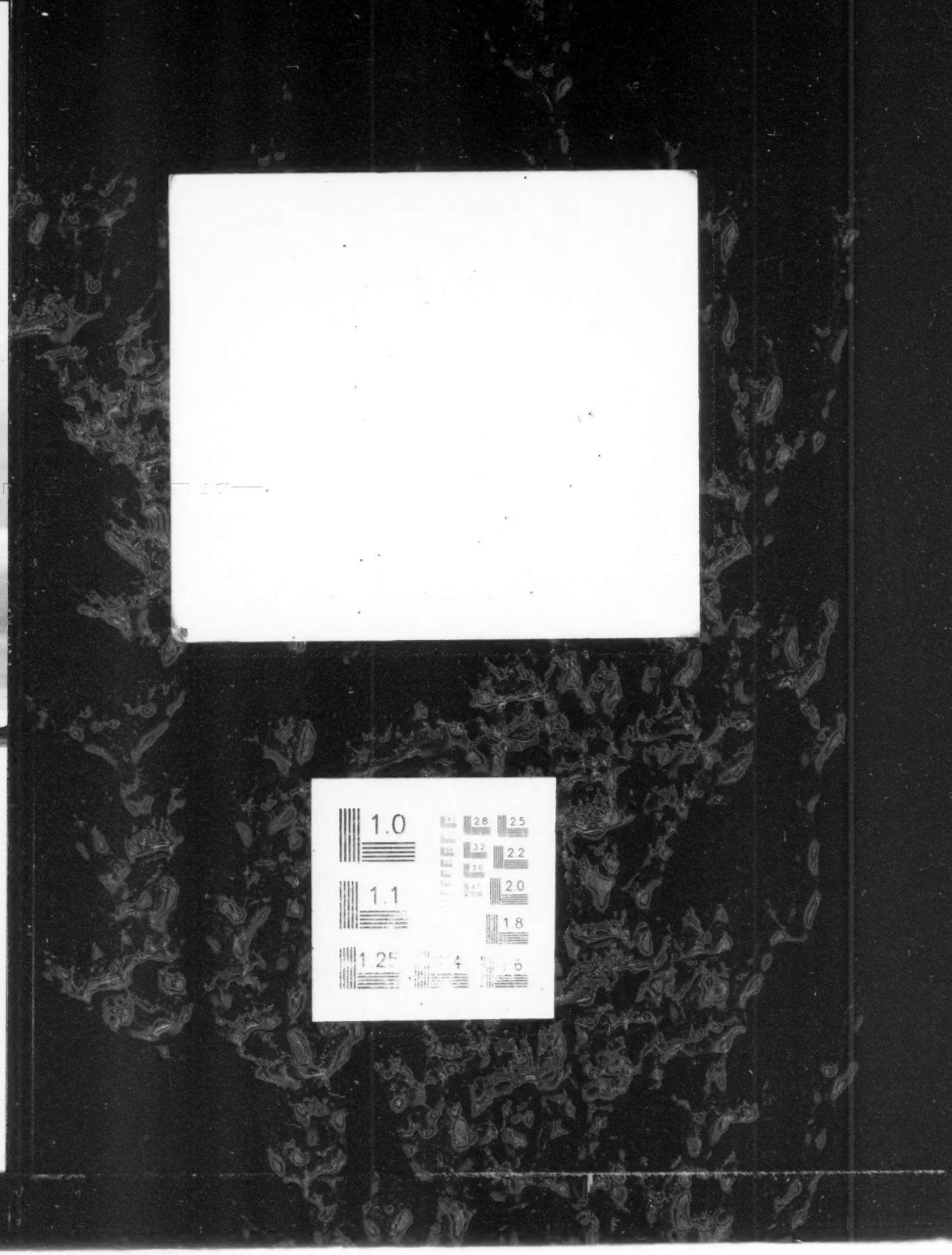
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